

# **EXTRACTION**

ART ON THE EDGE OF THE ABYSS

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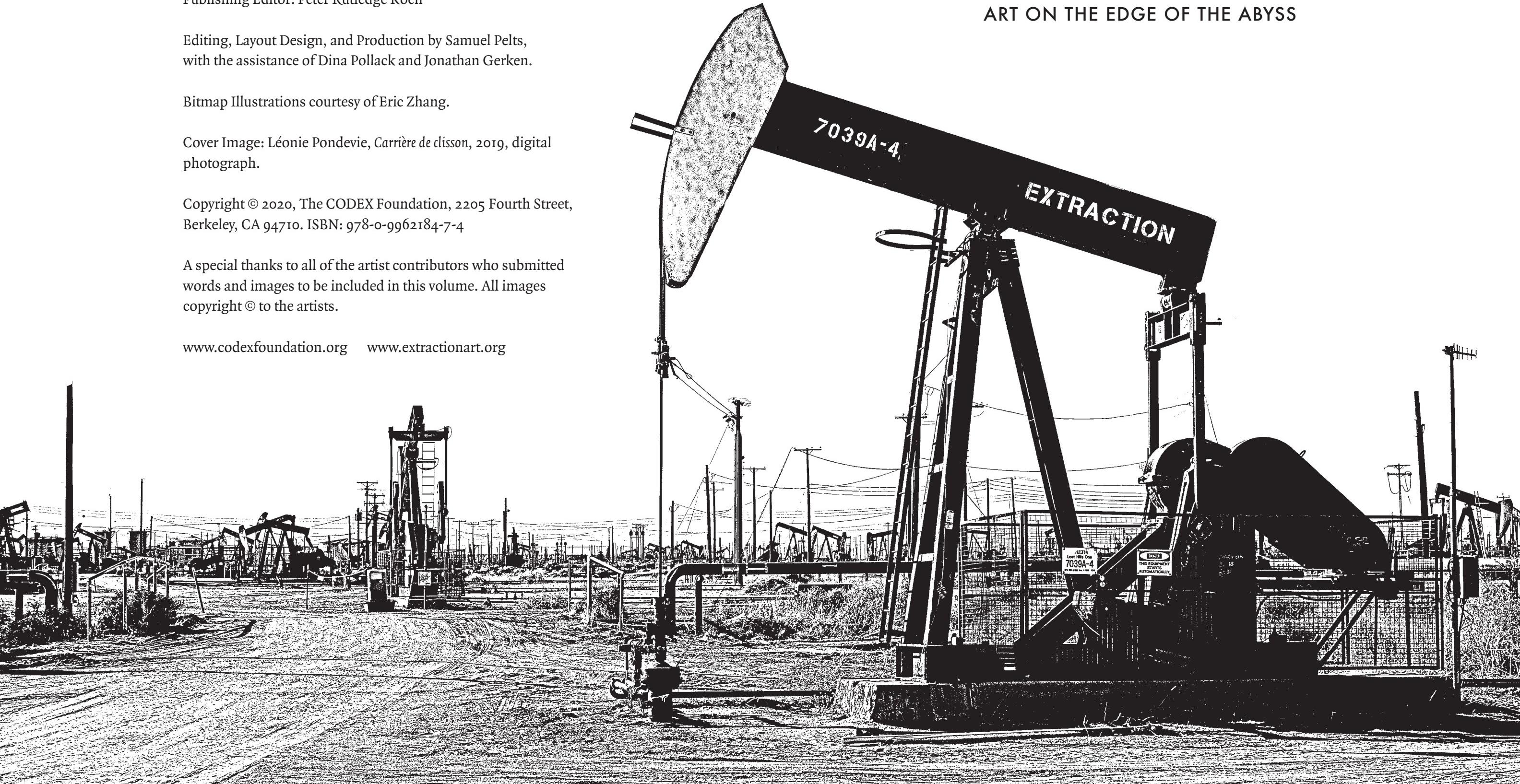
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# EXTRACTION

ART ON THE EDGE OF THE ABYSS



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This book is dedicated to the memory of Edwin Dobb (1950–2019).

Ed was a co-founder of EXTRACTION: Art on the Edge of the Abyss, and for him the project was a pursuit of passion. His careful correspondence was instrumental in expanding the boundaries of the project to encompass the many hundreds of artists and creators, from all walks of life, who make up our ranks today. The diversity of our project, whether defined in thematic, ethnic or geographical terms, is largely due to Ed's vision of inclusivity, not to mention his unshakeable outreach efforts.

This ruckus is for you, Ed.

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Michael Light, 100 SUNS: 045 STOKES/19 kilotons/Nevada/1957, 2003, 16 by 20 inches, pigment print, ed. 5

## PREFACE

*"The prisoners of the system will continue to rebel, as before, in ways that cannot be foreseen, at times that cannot be predicted. The new fact of our era is the chance that they might be joined by the guards. We readers and writers of books have been, for the most part, among the guards. If we understand that, and act on it, not only will life be more satisfying right off, but our grandchildren, or our great grandchildren, might possibly see a different and marvelous world."*

—Howard Zinn

The term “existential threat” has become overly fashionable in recent years, and it is now thrown around with such frequency that the phrase has lost most of its potency. For an information-based society helplessly addicted to spectacle, whose collective memory is daily impaired by a creeping barrage of media overstimulation, the term’s casual overuse belies both the magnitude and the historical uniqueness of the very real existential threats we face today—threats which we might categorize as anthropogenic, that is, originating from human activity. In such conditions, it’s easy to forget that the development of humanity’s capacity to destroy itself—whether by disrupting the delicate equilibrium of the earth’s climate systems, or through the proliferation and use of nuclear weapons—is an extraordinarily recent and unprecedented development, on both geological and human timescales.

The first irrevocable crossing of that bridge occurred within my grandparents’ lifetime with the harnessing of nuclear power. By splitting heavier atoms into lighter ones, scientists discovered they could create an enormously exothermic chemical reaction, capable of generating enough heat and energy to power a turbine—or destroy a city. Indeed, the destructive capabilities of nuclear power proved to be so massive that—when combined with the effects of the poisonous radioactive material it produces as a byproduct—its weaponization threatens to render the planet uninhabitable.

At the heart of the nuclear question is humanity’s obsessive need to convert chemical compounds into energy—energy to power our homes, our vehicles, our airplanes, our smartphones, our war machines, our bitcoin mining—the list goes on ad infinitum. That same need lies at the core of another, older anthropogenic process: one that’s been going on in an institutional fashion for nearly three centuries now, but which has accelerated so rapidly in recent decades that it, too, has crossed the threshold of becoming an existential threat to humanity. I’m referring, of course, to the extraction and burning of fossil fuels, an accelerating process which is causing global temperatures to rise over time by releasing heat-trapping gases into the atmosphere at a rate that is changing the very composition of the air we breathe.

To emphasize both the scope of the problem and the urgency of addressing these developments, let us put things into context: In the brief three decades I’ve been alive, humanity has produced more anthropogenic greenhouse gas emissions than in the previous 200,000 years of human history. This means that an overwhelming amount of damage to the climate has occurred in the span of a single generation. Perhaps even more alarmingly, scientists also believe we have an even smaller amount of time to prevent further warming from causing truly cataclysmic levels of disruption in the form of food shortages, droughts, sea-level rise, ecosystem collapse and irreversible loss of biodiversity. There’s a certain incomprehensibility to the emotional weight of that sentiment. It’s as if a single human brain is incapable of processing just what it means to be alive under such truly unprecedented circumstances.

The situation calls to mind the cinematic trope of “the chosen one”—the prophecy-fulfilling protagonist on whose shoulders the world’s survival depends. In a sense, everyone living today (around 7 percent of the total number of humans ever born, it is believed) could be said to collectively comprise “the chosen generation:” the narrow sliver of hu-

manity whose decisions will be among the most consequential ever made by and for our species. Whether or not we measure up to the enormity of the task is up to us, but the actions and inactions of the world's governing bodies, international institutions, private industries, and ultimately, its people, will determine over the coming few years the course of history for thousands of years to come.

Given that the industrialization of the world's economies is at the root of our addiction to natural resource extraction and overconsumption, the struggle to change course will likely be monumental. After all, the modern growth economy itself was only made possible in the first place through the discovery, removal and burning of ancient hydrocarbons locked underneath the earth's surface—the remnants of plant matter that died millions of years ago—repurposed as a bulwark against the Malthusian trap that had restricted our population's expansion for millenia. For as long as economic systems continue to value growth above all else, it is clear that no meaningful policy changes will come unless or until governments are compelled to act by the collective will of the people. And we are quickly running out of time.

*Extraction: Art on the Edge of the Abyss* is a global coalition of artists and creators committed to shining a light on the effects of extractive industry in all its myriad forms, from mining and drilling to the reckless plundering and exploitation of water, soil, trees, marine life and other natural resources across the globe. A multimedia, multi-venue, cross-border art intervention, the project will provoke change by exposing and interrogating extraction's negative social and environmental consequences. The Extraction Project will culminate in a constellation of overlapping exhibitions, performances, installations, site-specific work, land art, street art, publications, poetry readings, and cross-media events, with artists spread out across four continents. Most of our programming is scheduled from Spring to Fall of 2021.

Joining with scientists and policymakers in sounding the alarm, we recognize the unique power of artistic expression to evoke a more visceral and emotional response than, for instance, a peer-reviewed study, a Superfund assessment, or a set of statistics from the Intergovernmental Panel on Climate Change. Art succeeds in allowing a person to feel the effects of extractive industry in a way that numbers and graphs cannot convey. Through the creative process of artmaking we hope to facilitate what has been a decades-long struggle to communicate evidence-based scientific perspectives on environmental issues to the general public in a way that can break through into the cultural mainstream. Given the limited audience enjoyed by individual artists—even the ones who have attained some degree of notoriety—such a breakthrough is only achievable if we join all of our voices together, with each artist signal boosting the voices of their peers and collaborators.

At once decentralized, non-hierarchical, and self-organizing, the Extraction Project encourages artists, art venues, curators, and art supporters to participate and collaborate as they see fit, including helping the project expand geographically. Though we are supported by the CODEX Foundation, a non-profit organization based in Berkeley, CA, Extraction is not owned by any person or entity. Everyone can be both creator and catalyst. At a time of growing despair and paralysis, people from all backgrounds and levels of experience—from the amateur to the virtuoso—can take action. We invite everyone to join us in creating an international art ruckus.

Like the project itself, the book you now hold in your hands is many different things at once. Partly a group catalog of extraction-related artwork, each artist or creator's individual contribution documents their own personal investigations into the extraction question, addressing a specific issue or set of issues under the broader umbrella of the Extraction Project. The project is by no means limited to the visual arts—in these pages you will also

find poetry, critical writings, philosophical treatises, manifestos, musical scores, conversations, historical or found photographs, and much more. The words and images collected here can thus be seen as discrete stories and aesthetic investigations that nonetheless make up part of a larger ongoing story in which we are all participants (the reader included). It should also be noted that the views expressed by individual contributors are solely their own.

A number of the submissions printed here offer snapshots of research projects that are ongoing, while others provide merely a small window into a larger body of work. For this reason the reader is encouraged to dig deeper, and to regularly check the Extraction website for the latest updates as the project continues to expand and develop after the printing and distribution of this volume.

I should also briefly address the timing of the printing and distribution of this publication, since the reader might at this point be wondering why we have decided to release an art catalog that seemingly precedes the events and exhibitions that make up the bulk of the project. This book can be thought of as the starting gun of the Extraction Project. Its primary purpose is not to document the project, but rather to facilitate its mobilization. It is meant to be a resource and a guidebook for some of the events and exhibitions slated to take place from early Spring to late Fall 2021. In the following pages you will find press releases and exhibition information from galleries, museums and public art spaces, a directory of events, and world and regional maps depicting the locations of every major Extraction event. Though much of the work gathered here will be on display in 2021, some of it may not be, and exhibitions will undoubtedly feature new work not included in these pages. To the extent that it possesses the characteristics of a catalog, this publication is an appetizer. Summer 2021 is the main course.

Four hundred centuries of artmaking have shown us that in times of great challenge, when

a culture has lost its way, the arts can serve as its moral guide—the light in the wilderness that leads us back to the path. Never have we faced greater challenges as a species than in the era we have just entered. To overcome the existential threats of our time, the majority of the people in the world must begin to understand their individual obligations to rise up and demand change. The fight cannot be won if it is left for scientists and policymakers alone, nor should the frontline soldiering be left to those vulnerable, disadvantaged or disenfranchised communities—often indigenous communities and people of color—who have no other choice than to resist as a matter of survival. For the revolution to be successful, the guards of the system must also revolt alongside its prisoners. An act of creation is the remedy for a destructive appetite, and artists, too, have a crucial role to play in the coming wars. This is our opening salvo.

—Samuel Pelts  
May 2020  
Berkeley, CA

For more information about how to get involved in the Extraction Project, organize or curate an event, become a participant, or donate, please visit [www.extractionart.org](http://www.extractionart.org).

Document and post your work with #ExtractionArt

# INTRODUCTION

## THE AGE OF THE SACRIFICE ZONE

Edwin C. Dobb

Some scientists say we've entered the Anthropocene, a new geological epoch in which *Homo sapiens* is the most dominant force on Earth. No more convincing—or unnerving—example of our recently acquired global influence exists than climate change, by which we are recklessly modifying every feature of the planet's surface. Melting glaciers and warming seas; prolonged droughts, floods of unprecedented scale, and ferocious super storms; diseased forests and dying reefs, mass extinctions, entire regions rendered hostile to all but weeds and cockroaches; along with tens of millions of our fellow human beings, often indigenous people, forced from their homelands and turned into refugees: If this be our moment in evolution, know it by the turmoil we cause and destruction we sow.

Climate change is one of many outcomes of our ability to remove coal, oil, and gas from the ground and place them in the service of human ambition—converting ancient carbon into instant energy. We've similarly laid claim to other raw materials, including timber; precious metals like gold and silver; base metals like iron, lead, copper, aluminum; sand, salt, shale, silica, clay, and gravel; uranium and plutonium; rare earths (used in electronic devices like smartphones); dwindling reserves of precious fresh water; the once-bountiful inhabitants of the sea; the fertile soil upon which all of life depends. And the pace is accelerating even as the social, cultural, and environmental damage expands. Now that China, India, and Indonesia have joined the Western world in adopting urban industrialization as the highest expression of civilization—and as the global human population draws closer to ten billion—our species is going to greater and greater

lengths, both technologically and geographically, to meet the ever-increasing demand for natural resources. As much as anything else, the Anthropocene is the age of extractive industry, whose worldwide signature is the sacrifice zone—an official government term first used to designate areas permanently devastated by nuclear attack but which now applies more generally to ravaged landscapes, poisoned waterways, and areas overwhelmed by impoverished human conditions.

How might artists respond to this extraordinary turning point in human history? Can we acknowledge the damage caused by extraction without inadvertently romanticizing it? Can we confront and defy without reducing our work to impotent, short-lived moral exhortation? Can we go further, subverting ingrained patterns of submission and self-delusion? Can we interrupt the narrative of historical progress that glorifies utility, exploitation, and inevitability, acknowledging that in the U.S., for example, extraction was part of a larger colonization enterprise known as “manifest destiny,” whose many unfortunate effects—stolen land, suppression of languages and traditional cultural practices, enslavement, and genocide—have been borne disproportionately by native populations and people of color? Can we break the spell that blinds us to everything humankind has known about hubris for thousands of years, since tribal smiths first dug up formless rock and transformed it into tools and weapons—an audacious act which, even then, people rightly suspected was fraught with risk?

Peter Koch, who conceived of the Extraction Project in a moment of “late-life impatient rage,” is well-acquainted with the mixed legacy of extractive industry. Koch grew up in Missoula, Montana, just downstream of the mines, mills, and smelters of Butte—one of world’s richest copper producing centers, with around 22 billion pounds of extracted copper already removed and more on the way. Today, after 140 years of relentless industrialized mining, Butte is also the uppermost part of the largest



Jetsonorama, *I Am the Change*, installation, photograph by Ben Knight

Superfund complex in the United States, a place of staggering environmental ruin—“the black heart of Montana,” as journalist Joseph Kinsey Howard put it—that includes a vast reservoir brimming with toxic mill tailings; a long-idle open pit mine, now containing some 50 billion gallons of highly acidic, metals-laden water; a permanently contaminated aquifer entombed beneath the town; and a polluted watershed (the first one hundred miles of the upper Clark Fork River, which is a main tributary of the mighty Columbia River, the lifeblood of the Pacific Northwest). Like Concord, Gettysburg, and Wounded Knee, Butte is one of the places America came from, and it is where we must return, in the

manner of a pilgrimage, if we wish to grasp in full the implications of our appetite for metals.

At the end of such a journey, the intrepid pilgrim will arrive at the edge of the immense excavation known as the Berkeley Pit. A mile wide, a mile-and-a-half long, and a third of a mile deep, the Pit epitomizes our dilemma. Where once we depended on it for the metals it yielded (no copper means no electricity, which means no universally available light and power, to cite but one example), it now poses a grave threat, a threat that will persist long after the benefits it provided have been exhausted. Groundwater will continue to migrate into the pit, continue to become corrupted and rendered lethal, in per-



Chuck Forsman, Berkeley Pit, Butte, MT, 2019, photograph

petuity. Standing on the brink, before the towering back wall of the Berkeley, whose semi-circular sloping terraces resemble a gigantic Greek amphitheater, one is overtaken by a sense of doom. A tragedy has played out here. And the reckoning is far from over. As recently as the fall of 2017, some 3,700 migrating snow geese perished within hours of landing on the toxic lake. Viewed from the edge, the pit is a théâtre du sacrifice. The gateway to dominion is also a staircase to hell—Milton’s “wild Abyss,” the womb and grave of nature.

While the Berkeley Pit is the historical origin and symbolic nucleus of Extraction, the project encompasses much more. Multiply the Pit by hundreds of operations of similar size and impact, add thousands of underground mines (diamonds, gems, gold, and other precious metals) and strip mines (coal), then imagine them distributed across all of the world’s continents, save Antarctica. That will

give you a fuller picture of the predicament posed by modern industrialized mining. But a complete survey would also include the many other large-scale artifacts of extraction—clear cut valleys and mountain sides; oil and gas fields, refineries, and terminals; coal trains and power generating stations, petroleum tankers and transmission lines; dams, factories, and manufacturing facilities; abandoned quarries, waste ponds, dumps, and spill sites; lifeless barrens, dried-up lakes, and sterile streams where once plants and animals were plentiful; dust bowls, man-made deserts, and ocean dead zones; along with countless reclamation and remediation projects. Taken together, they form a brutal, ever-present cultural arena where most of us reside most of the time, as consumers of products and services to which we are addicted.

The question we must ask ourselves is whether we possess the daring and imagination to break



Roberto “Bear” Guerra, Cofán Series #4: Alejandro Cures Young Girl, Dureno, Ecuador, photograph

the silence surrounding the perilous bargain Homo sapiens has struck by hitching its fate to the metastatic growth of extractive industry. Can we plumb the source of our undoing—that urban industrial civilization is essentially sacrificial? That as surely as night follows day, nemesis follows hubris? That human folly of such colossal proportions exacts an inescapable and equally colossal if sometimes displaced or delayed toll? And can we reach the public with our efforts when the media remains obsessed with mind-numbing spectacles of little import? Can we induce ruptures in the all-encompassing waking nightmare of popular and commercial imagery, making our voices heard around the American West? Indeed, around the world? We launched the Extraction Project because we believe the answer is yes. More than that, we believe we have no choice but to try.

Merely bearing witness is not enough. As visionaries and outsiders, we are capable of appropriating and reconfiguring contemporary propaganda and re-deploying it in service of our own alternative concepts and transformative objects. We can employ photography, video, painting, sculpture, land art, performances, installations, site-specific work, and various hybrids thereof to conduct “hardcore, nasty” investigations of extraction—all of its forms and all of its consequences, including its effects on human health and the social and cultural damage it causes, especially to poor, minority, and indigenous communities. We can follow a new model of inclusivity, recognizing and respecting stakeholders of all races, cultures, genders, and ages; and helping guarantee that the historically marginalized people who’ve suffered most because of natural resource exploitation are provided opportunities for interpreting their own experience and subverting op-

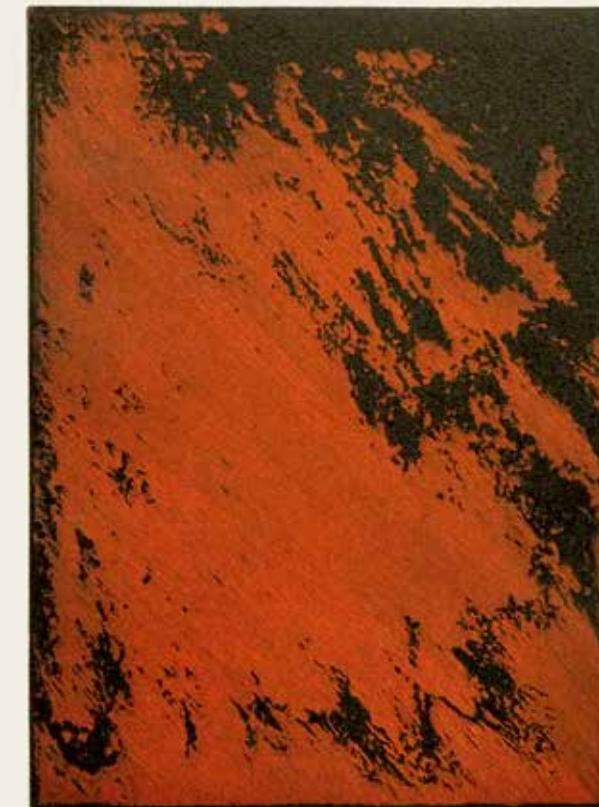


Richard Wagener and Edwin Dobb signing copies of "Corrosion," Edwin's contribution to the Extraction broadside portfolio WORDS on the Edge. Sales of the limited edition portfolio helped raise funds for Extraction: Art on the Edge of the Abyss.

pressive narratives. We can expose and interrogate the abundant evidence of Faustian overreach most people don't wish to acknowledge, and re-represent it with all the eye-opening, assumption-smashing power the arts have always exerted on the human condition. We can counter the violent subjugation of nature brought about by mining and drilling with the playful but liberating strategy of détournement. Through radical engagements and inspired de-rangements we can destabilize the way extractive

industry is portrayed and consumer culture promoted. We can hijack and reroute the conversation about what constitutes a good life in the opening decades of the twenty-first century. We can sound an alarm.

We can raise a ruckus.



## CORROSION

Edwin Dobb

11.11.18

Rust-colored, reeking of sulfur, and surrounded by corroded earthen terraces so sterile they appear incandescent in strong light, the 600-acre lake that rests within the immense man-made cavity known as the Berkeley Pit looks nothing like a refuge, though it must have seemed that way to the ill-starred flock of snow geese that stopped there while passing through southwestern Montana last November.

No one knows how many birds eventually rose from that bitter pool and flew over the rooftops of Butte, the town that borders and embraces this former copper mine, continuing their winter migration from Arctic Canada to California, but at least 342 of them did not. That is the number of carcasses Pit monitors found adrift in the lake, floating upside down in a reflected sky, and washed ashore in the weeks following the flock's stopover.

Postmortems revealed what most people immediately suspected: that the geese had succumbed to the water, which is acidic enough to liquefy a motorboat's steel propeller, and to its poisonous mineral contents, principally copper, cadmium, and arsenic. In each bird autopsied, the oral cavity, trachea, and esophagus, as well as digestive organs like the gizzard and intestines, were lined with burns and festering sores. To even so much as sip from the Pit, it seems, is to risk being eaten alive, from the inside out.

*Corrosion* was designed and printed by Richard Wagener, Mixolydian Editions, Petaluma, California  
Text © 2018 by Edwin Dobb. Adapted from "Pennies From Heaven," Harper's Magazine, October 1996  
Eighty copies reserved for the Codex Foundation's EXTRACTION: ART ON THE EDGE OF THE ABYSS  
Wood Engraving © 2018 by Richard Wagener

Edwin Dobb, "Corrosion," from WORDS on the Edge broadside portfolio, Mixolydian Editions, Richard Wagener, Printer

# A WAR WORTH FIGHTING

## IN CONVERSATION WITH PROJECT FOUNDER PETER KOCH

Samuel Pelts with Peter Rutledge Koch

SAM PELTS: I think it may be useful to the reader if I began by asking you where the idea for the Extraction Project came from. Can you give us a brief overview of the origins of the project?

PETER KOCH: Origins are often complex and when multiple influences converge there is a moment of clarity, and of vision. With Extraction: Art on the Edge of the Abyss, that moment came to me in the bookstore of Dia Beacon in New York on the banks of the Hudson River. The triggering moment came when I picked up a copy of a small book about an exhibition in Nanaimo, British Columbia entitled Black Diamond Dust, and published in Germany. On the cover, it read:

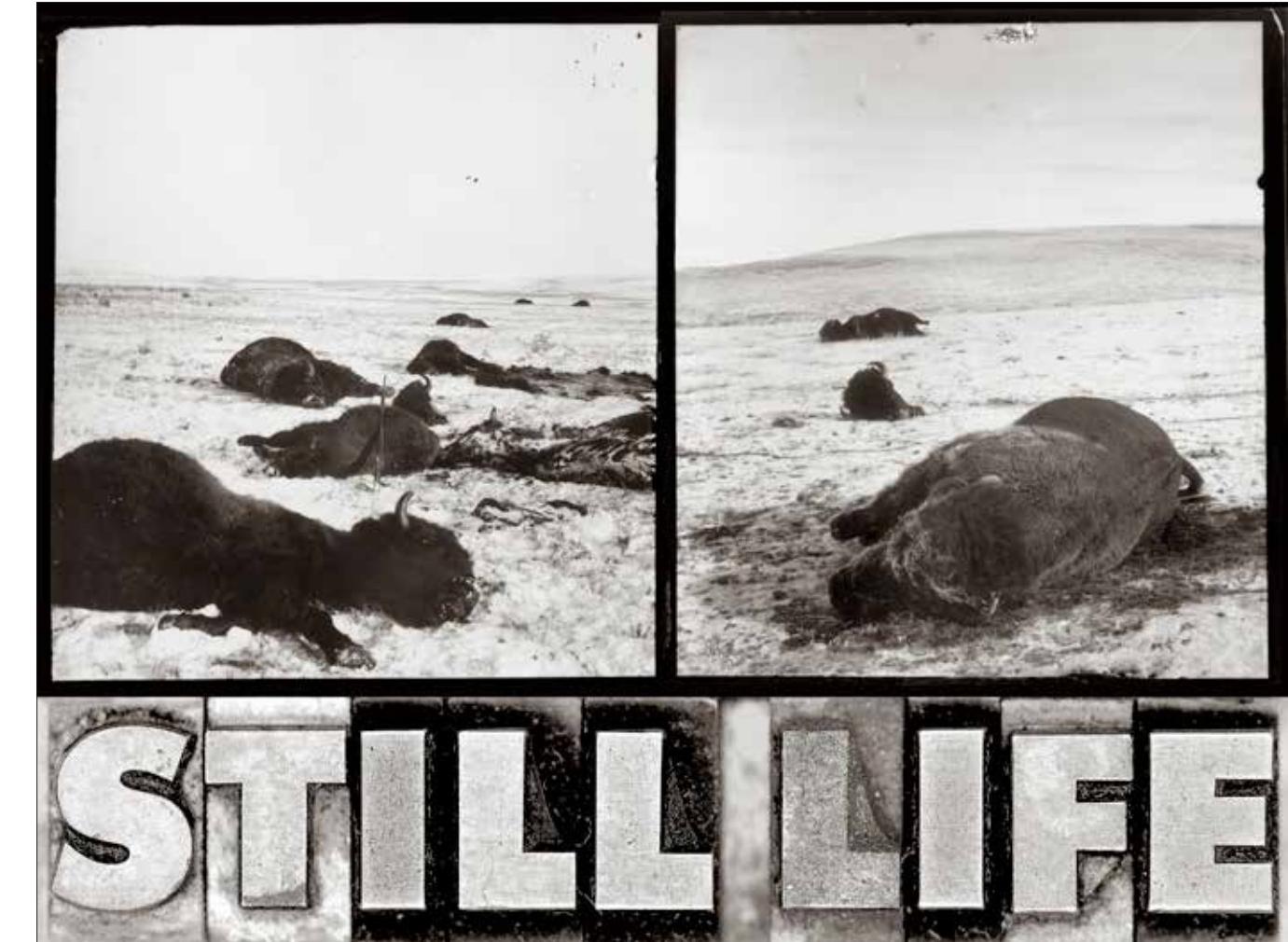
*"BLACK DIAMOND DUST is the first of three projects to engage the resource industries of Vancouver Island (mining, forestry, and fisheries) through contemporary art. This publication responds to coal mining: an industry that formed and fragmented communities through economic development, racial segregation, and labor inequity, while fueling the modern world."*

I was stopped dead in my tracks. Here I was in the heart of the New York art world in November of 2017 and I was suddenly transported back to my childhood in Montana in the 1940s and 50s when the Anaconda Copper Company ruled the state both politically and economically, polluted its rivers, and deforested its great mountain pine reserves to serve industry's need for copper to power a world demanding more and more electricity every day. My rivers, swimming holes, and trout streams—the air we breathed—all were affected by the monstrous

industrial hunger that was eating up every creek and meadow, right to the borders of the National Parks and wilderness reserves that my grandfather had fought his entire life to establish and preserve, while at the same time trying as hard as he could to balance wildness with the nation's ever-growing appetite for timber and minerals. In our lifetimes, my father and I witnessed Montana's transformation from a near pristine wilderness which once supported several nations of peoples who had lived there for thousands of years without destroying the wildlife and polluting the air and waters, into the Superfund site it is today.

The moment seemed ripe with possibility. I was galvanized by that book in that moment. I wanted to engage the art world in Montana in an intervention, a project that would respond to the environmental disasters that we had already experienced and were soon to experience again as our state and national government prepared to sell off all the remaining mineral rights, granting licence and permission to ever more powerful and greedy industrial interests crouched right at the edge of our remaining state and national public lands. I wanted exhibitions and performances in museums, on the streets, in galleries, and in garages.

I was so moved that I called Laura Millin, Director of the Missoula Art Museum and asked if she would consider spearheading an exhibition project focusing on the Berkeley Pit in Butte, Montana, part of one of the world's largest Superfund sites and a mining disaster the likes of which had never been seen or foreseen on earth. She was more than supportive and committed on the spot. 2021 is a symbolic year at the heart of the matter. 2021 is the year when the acid-and-arsenic-laden water seeping into the pit at the rate of 150,000 gallons a day (48 billion gallons and counting) will rise high enough to runoff into the groundwater that feeds the streams at the headwaters of the great Columbia River. A harbinger of the coming attractions in Australia, Canada, Russia, China, all the undersea regions, the



Peter Rutledge Koch, Still Life, from *Nature Morte*. Editions Koch, 2005

mineral and coal and oil laden territories in Africa and soon the Arctic and Antarctic regions as well.

The very next day I rang up the curator at the Holter Art Museum in Helena, Montana and received the same enthusiastic response. There! I had accomplished my goal—the two museums that flanked the greatest copper mining disaster of the twentieth century were collaborating. I called it a day and was so excited I called a friend (the painter Christopher Benson in Santa Fe and told him about the museum exhibitions in Montana. He immediately suggested I call Laurel Reuter, Director of the North Dakota Museum of Art, and before I had finished explaining, she was thinking ahead about oil and gas extraction photography and exhibition dates in 2021. The message I was reading was that the time was ripe to raise some hell. So I opened it

up all the way and began exhorting everyone I could to join us in our project.

SP: What brought Edwin Dobb into the project and how did you two begin to collaborate?

PK: Ed and I had been great friends since the late 70s when I was publishing *Montana Gothic*, a maverick literary and graphic arts journal in Missoula. Years later, when Ed was a contributing editor at Harper's Magazine he wrote "Pennies from Hell" (1996), a lyrical essay about Butte and the Berkeley Pit—one of the finest and most sensitive essays ever published about his hometown. I called Ed one day soon after I had heard that North Dakota was joining up and explained my idea and how it was catching a wave of interest. Within weeks, Ed and I were conspiring



Peter Rutledge Koch, Deadfall, from *Nature Morte*. Editions Koch, 2005

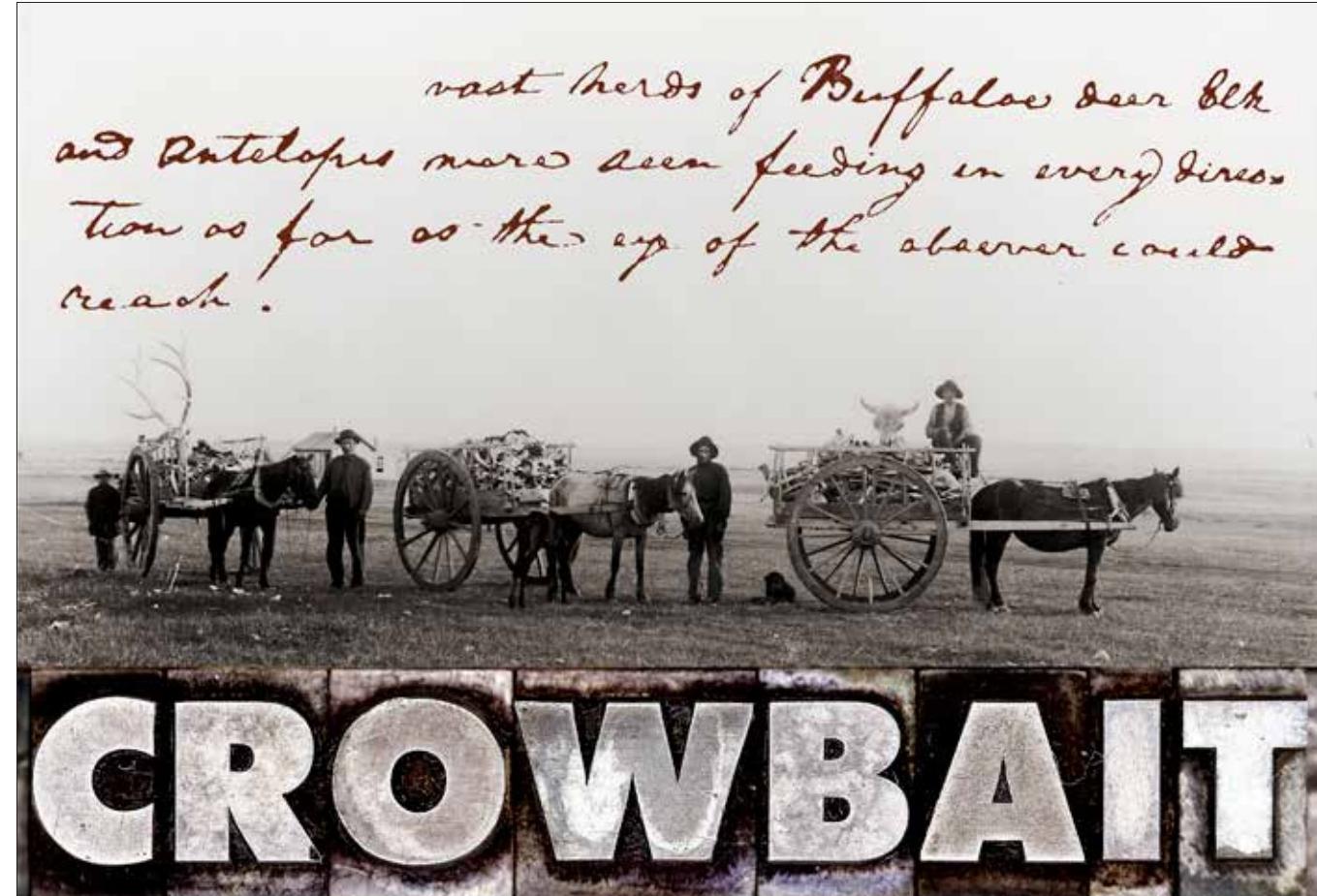
daily about how to negotiate the delicate political and social situation with regard to Butte and any possible collaboration with artists in the area.

Ed decided early on that this was a project that he could throw himself into; one that would bring him much closer to the art world that, as a professional journalist, he had worked around the edges of but never at the center. He was readying for retirement from UC Berkeley and wanted to make Extraction: Art on the Edge of the Abyss his passion and his main subject of inquiry, as well as a focus for his writing. Ed was a philosophical and a poetic essayist and was just beginning to see how the Extraction Project was a perfect marriage of his finely honed skills as an investigative writer on environmental issues (he had only recently contributed essays on fracking in North Dakota and gold mining in Alaska for National Geographic) and the poetic vision that he had been nurturing all his adult life. Ed was especially interested in photography and said to me on at least one occasion that he thought photography reached deeper into the human psyche than any other other art form when it came to our major theme and focus—environmental disaster and industrial irre-

sponsibility. He was deeply influenced by his years writing for National Geographic, working closely with photographers of consummate skill.

Together, we set out to exhort, encourage, and recruit every sort of artist—painters, poets, musicians, dancers, and curators, critics, and administrators to join us in raising a “ruckus” (Ed’s term, and an endearing one too) all over the American West. Before too long—because the word was rapidly spreading—we were talking to artists and independent curators in New York, Paris, Berlin, and Dubai. As a team, we began introducing each other to everyone we could roust from our professional and personal lives and suddenly we were being introduced by word of mouth and reputation all across the globe.

It was not long before we realized that we could not carry on entirely by ourselves and here I want to introduce you, Sam—we were fortunate to have you working at the CODEX Foundation (and my press) while you were preparing for graduate school. We asked you to take care of our online presence, and eventually help us produce this publication. At around the same time my participation thinned



Peter Rutledge Koch, Crowbait, from *Nature Morte*. Editions Koch, 2005

considerably due to my diagnosis and subsequent treatment for multiple myeloma, a bone marrow cancer which pretty much knocked me out for the next twenty months. As a consequence you [Sam] and Ed became the de facto directors-in-chief of the project—insofar as there is any “direction” in a project like this one, where there is no center, no hierarchy, and no boundaries other than the shared themes that are raised by art and extraction.

SP: I wanted to talk a little bit about the goals of the Extraction Project and how they have evolved as we’ve grown. In the early days, you would often talk about “raising a ruckus,” to bring back Ed’s phrase you mentioned earlier. Do you still feel that raising a ruckus may be perhaps the truest expression of what we hope to accomplish in this project?

PK: I can only say that the goals remain exactly the same as Ed and I knocked them out in 2018. In the beginning we set out to invite the artists of the West and subsequently, due to the international reception we received, the borders of the project just melted away. Under Ed’s and your direction we became an international series of events and actions that reflect the condition of the artist in a world in crisis. After all, the crises we face today (as we have just seen with the Covid-19 pandemic) truly know no borders. I certainly hope that there will be a ruckus—and some hell raised as well! From where we stand today, we need to shout out loud and clear, before we are buried beneath the media swarm that will surround the 2020 presidential election and its aftermath.

SP: Let me zoom out for a minute and ask you more generally: What do you believe to be the role of artists in addressing issues of reckless natural re-

source extraction and environmental deterioration? Do artists have the capacity to be active players in geopolitical events, or is our role that of the passive observer or commentator? How do we get people to understand that the 2020s is likely to be the single most crucial decade in all of human history up to this point? With the possible exception of the Cuban Missile Crisis, we are about to face what I would consider to be our first big “make-it-or-break-it” moment as a species.

PK: The artists and scientists and philosophers and poets that I have been most deeply impressed with have all been active players fighting injustice, ignorance, and the abuse of power to the fullest extent of their own personal ability—a range that extends from the mere act of voting, to starting an underground newspaper or alternative food distribution network. To hide your head like an ostrich in some ivory tower of art makes for a silly bird with no idea how to fight against the species death that is in store for it if the war is lost. Or is artistic purity an attempt to disappear into privilege and hope for the best? If you don't think this is a war just take a hike through the Alberta Tar Sands, or see what happens when you wear the wrong t-shirt in oil country. Have you ever been shot at for your political beliefs? Believe me, it is bracing—and as close as the next time you take a wrong turn down a certain back road (you name the place, pretty much every state and country has them).

SP: Right. The privilege of purity—sounds about right. It seems to me that for Ed, the driving question our project always sought to answer was: What can artists do? It's been interesting for me to read other participants' attempts to grapple with this same question (many of which are strewn throughout this book). Richard Misrach, for instance, discusses the role of art in “bearing witness” to bad behavior in an effort to change course moving forward, though he believes that actual real-world policy transformations rarely, if ever, stem directly from artistic

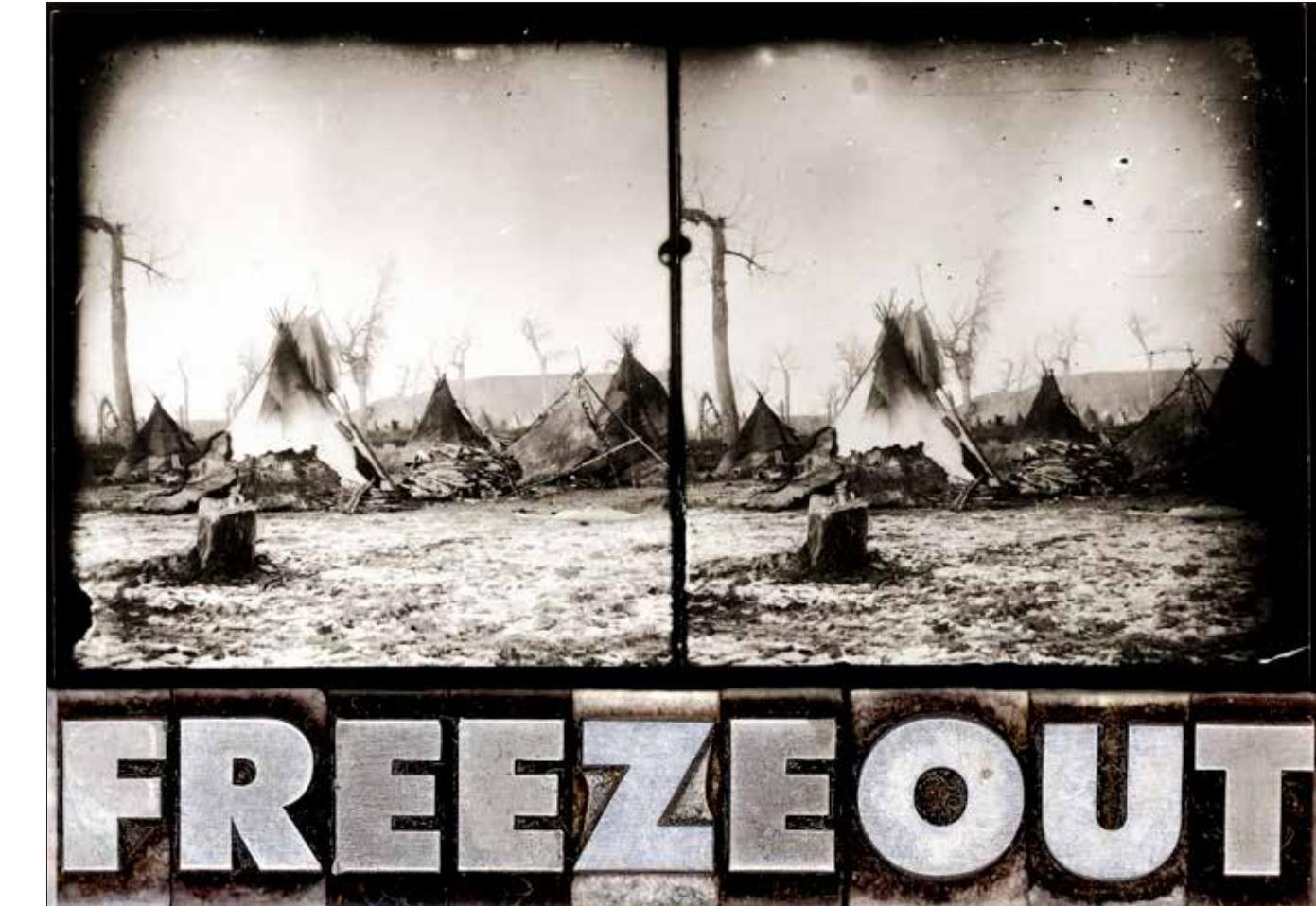
expression. Likewise, Christopher Benson writes of the potential for art to elicit an autonomous experience in the viewer that can effectively rouse one to action, but notes, crucially, that the artist is hardly in the driver's seat when it comes to producing or mediating such an experience. Rather, it comes from within the viewer. Where do you come down on that question? What can artists do? How directly or indirectly do you believe the artist is capable of creating the conditions for change?

PK: I am with Misrach on the idea of bearing witness. My own work has always been an attempt to provide evidence through pictorial intervention and verbal interpretation—evidence for the prosecution of evil, wasteful practices and the puppets that provide the laws and routines that perpetuate the abuses I see everywhere I look. I have never been called to either legislate or to testify, but I am ready when you are. If only the artists ruled for a time... imagine all the billboards with quotations from Rachel Carson and Barry Lopez under and above photographs by Misrach and Dorothea Lange with invitations for paid free medical training for anyone who applies.

I believe artists are morally and ethically called to imagine alternative ways and worlds that, with as much persistence and innovation that we can bring to the job, will effect change. How we see the world is how we treat the world. Artists should always be seeing and making the world they want to inhabit. Nothing else can pass as art.

SP: Do you believe that artists have always had an obligation to address social issues? Or do you think it's because of the uniqueness of the circumstances in which we are living that more and more contemporary artists and creators have been conscripted into political wars, so to speak?

PK: Artists are and always have been citizens. The mythology of artist as outsider is an old and romantic tale, but largely fictional. Outside what? Either



Peter Rutledge Koch, *Freezeout*, from *Nature Morte*. Editions Koch, 2005

you are a member of a society, a social order, one which includes sculptors and musicians and poets, or you are an outcast—and true outcasts, whether rogues or the insane, are dangerous both to themselves and to others. As for the rest of us, we are not so much conscripted by circumstance into this war—we are just in it. It came to us—pre-manufactured by us, sold to us, and actively consumed by us. The war is everywhere and we are all warriors. The only question is—which side are you on? Anyone, including artists, can choose to ignore the war against biological diversity, planet and individual health, and the right to life and livelihood—but to ignore the situation is to choose the side of the sheep. Passive consumers are the best example of what the warriors for indiscriminate reign of capital desire.

You mention the present circumstances, which are certainly compelling. As artists we are no different than any other consumer-victim except in how we fight and with what tools. We are free to choose...

SP: Agreed. I would only add that to the extent that art is inherently political, it seems uncontroversial to assert that, at the very least, we place a higher premium today on that kind of content over aesthetics than in previous generations.

PK: Yes, that is how it looks to me.

SP: Much of your work in the book arts has dealt with issues of resource extraction for many years, with *Liber Ignis* being perhaps the most explicitly extraction-oriented work. I'm curious if you see

the Extraction Project as a logical extension of your own artistic output, a continuation perhaps of decades-long investigations? Or do you consider it to be something separate entirely?

PK: I had been working on *Liber Ignis* since 2013, and when the Extraction Project came to me (much the same way the CODEX International Book Fair and Foundation did in 2005) it was, as you observed, a logical extension of my practice. As much as I enjoy working in the solitude of my studio and study, I enjoy the entrepreneurial challenges of the marketplace, the polis, and the university.

SP: The climate crisis is obviously one of the central issues of our time. Nonetheless, Ed was always very adamant that we are more than “just a climate change project.”

PK: Yes, Ed was adamant on the subject. He was seeking the root causes of our self-destructive activity. Climate change is just an effect, and only one among many. The roots were embedded in the trans-human scale of operations; the industrial and financial might that created vast reserves of capital to be invested in ever farther and deeper extractions, and not a penny spent for social harmony, education, universal health care, preservation of the wild, etc. This behavior needs investigation and redress; exploring the disease of restless consumerism was Ed’s real interest and motive for recruiting art into the army of resistance.

SP: To me, responding to climate change without addressing the underlying philosophical questions that are at the root of our cultural addiction to extractive processes is like treating the symptoms of a deadly disease, while allowing—even encouraging—its continued spread.

And speaking of disease, I also wanted to briefly address the pandemic, which is ongoing at the time of this interview. In many ways, I’ve been thinking

about the global response to the coronavirus outbreak as something of a dress rehearsal for the coming climate crisis. And while it may be too early to tell whether that makes me more or less optimistic for the future, a lot of the themes are strikingly similar. In the U.S., for instance, we’ve been plagued with a clumsy, slow, and ineffective response from the federal government, in a hyper-polarized political landscape where seemingly anything can be reduced to a partisan issue. Meanwhile, the fractured nature of our media ecosystems fosters denialism and conspiracy theories across the board.

On the other hand, early adherence to the so-called shelter-in-place orders has shown that rapid collective action on a global scale for the benefit of humanity is possible after all. I’m particularly impressed by the fact that by mid-March, people were already staying indoors and heeding advice from epidemiologists—even before formal statewide orders were enacted. So in spite of everything I’m still hopeful that we can emerge from the present crisis with a renewed appreciation for the value of scientific expertise, and finally dispense with this anti-intellectualism garbage once and for all. What’s your perspective? When you look around at what’s happening, are you hopeful? Or is it all despair?

PK: Sam, I have lived to see forests logged and burned and grow back again. I have seen the effects of mankind’s benign absence and destructive presence. Maybe one day the Sahara will bloom again—maybe not. Maybe mankind will destroy itself, and maybe it won’t. I have seen people completely forget recent fires and build their homes smack dab in a forest likely to burn again soon. Stupidity and hope make for some interesting dramas. Maybe the bad guys will lose—but most likely not hard enough to disappear. In any event the show will be worth watching. And the war is worth fighting.



Peter Rutledge Koch, *Zeitgeist*, from *Nature Morte*, collage from engraved stock certificate. Collection of Peter Koch

“I can not but believe, that the time is not distant, when those wild forests, trackless plains, untrodden valleys, and the unbounded ocean, will present one grand scene, of continuous improvements, universal enterprise, and unparalleled commerce: when those vast forests, shall have disappeared, before the hardy pioneer; those extensive plains, shall abound with innumerable herds, of domestic animals; those fertile valleys, shall groan under the immense weight of their abundant products: when those numerous rivers, shall team with countless steam-boats, steam-ships, ships, barques and brigs; when the entire country, will be everywhere intersected, with turnpike roads, rail-roads and canals; and when, all the vastly numerous, and rich resources, of that now, almost unknown region, will be fully and advantagously developed.... And to this we may add, numerous churches, magnificent edifices, spacious colleges, and stupendous monuments and observatories, all of Grecian architecture...”

— from Lansford W. Hastings, *The Emigrants’ Guide to Oregon and California* (Cincinnati: George Conclin, 1845), pp. 151-152



## WORDS on the Edge

A limited edition portfolio of poetry & lyric prose in broadside format

[WWW.EXTRACTIONART.ORG/WORDS-ON-THE-EDGE](http://WWW.EXTRACTIONART.ORG/WORDS-ON-THE-EDGE)

WORDS on the Edge consists of twenty-six poems and lyrical texts addressing themes of natural resource extraction, overconsumption and ecological degradation.

Twenty-six notable poets and writers paired up with an equal number of highly regarded letterpress printers from four countries. Each author/printer pair then collaborated to produce an editioned broadside or print. Proceeds from sales of the portfolio helped to raise funds for Extraction: Art on the Edge of the Abyss.

Limited edition of 50 portfolios available for purchase. Portfolio dimensions: 48 by 32 by 3 cm. Portfolio comprises title leaf (with additional text, "The Edge," by Robert Bringhurst on verso), table of contents leaf, with colophon on verso, and 26 broadsides. Broadsides printed by various printers; each is autographed by the author, some are also numbered and/or auto-graphed by the printers.

### THE EDGE

Robert Bringhurst

Reprinted from WORDS on the Edge broadside portfolio

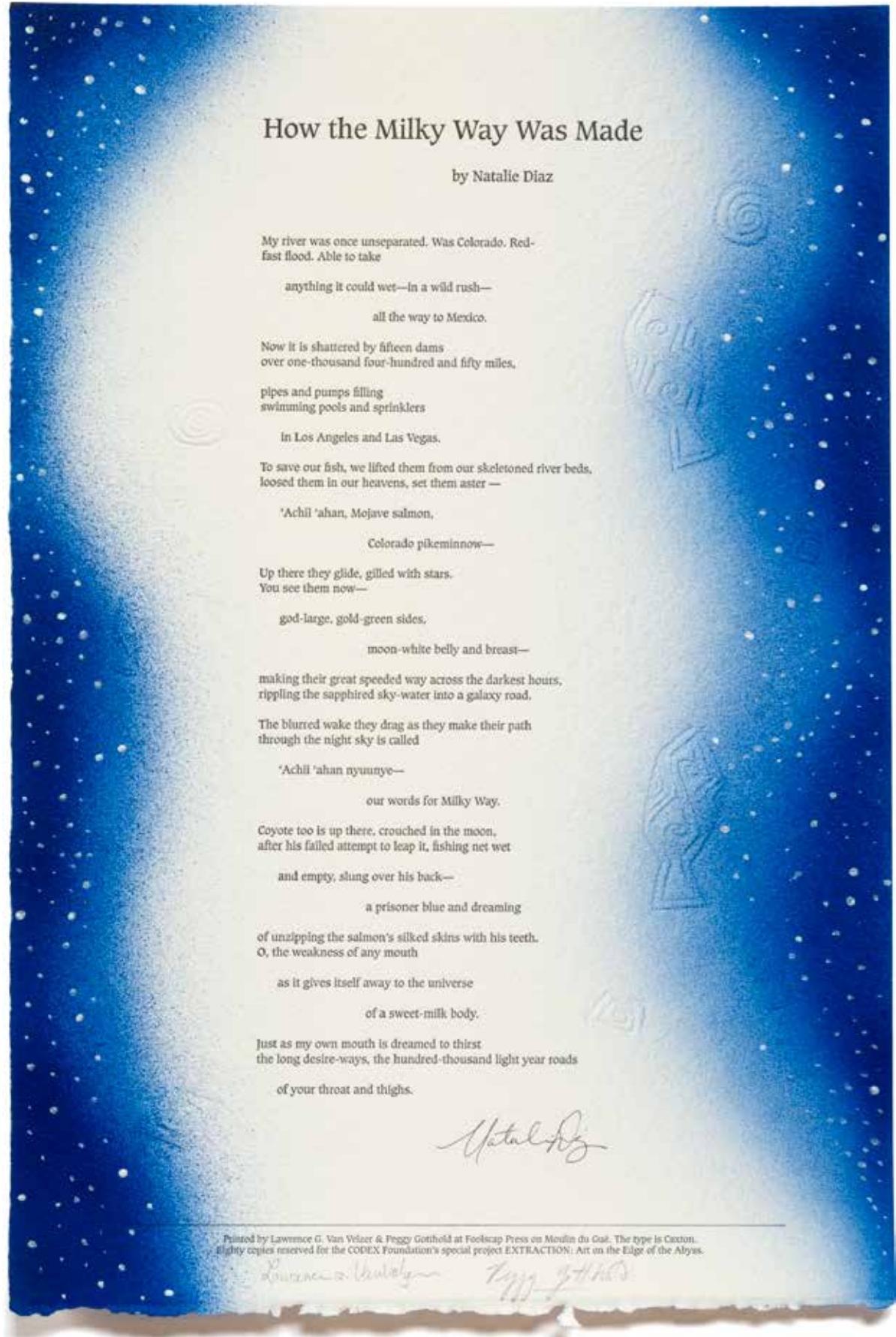
Planets and stars, like glaciers and rivers and forests, are mortal. They live long enough that we all find it easy to take them for granted, but pay them just a bit of the attention they deserve and you will notice that, like you, they do not last forever. The sun, for example, at four and a half billion years of age, has apparently lived about half of its natural span. Four billion more years may sound like a lot, but it is only fifty million human lifetimes. Long before we reach that mark, you can expect the dying sun to swell and swallow all the inner planets, earth included. Not long afterward, the sun will shrink and cool, losing so much weight it can no longer hold the surviving planets in orbit, and losing so much heat and light it cannot fuel a summer's day. By then, however, no one will be troubled by the climate or puzzled by the weather. When there are no planets left in the system, there will be no place for day and night or summer and winter to happen.

Stars and planets cannot go to heaven when they die, because that's where they've been all their lives. So have you, if you live on a planet – this planet, for instance, which moves like the others through heaven. But humans have a knack for turning heaven into hell. They do this just by shifting their perspective, losing track of where and who and what they are. Then they tend to think it's possible – even essential – to saw off all the limbs on which they sit, cut down the trees that give them food and shade and shelter, dig up the earth that bore the trees, suck out its innards, and move on, leaving lifeless tailing ponds and slag heaps in their wake.

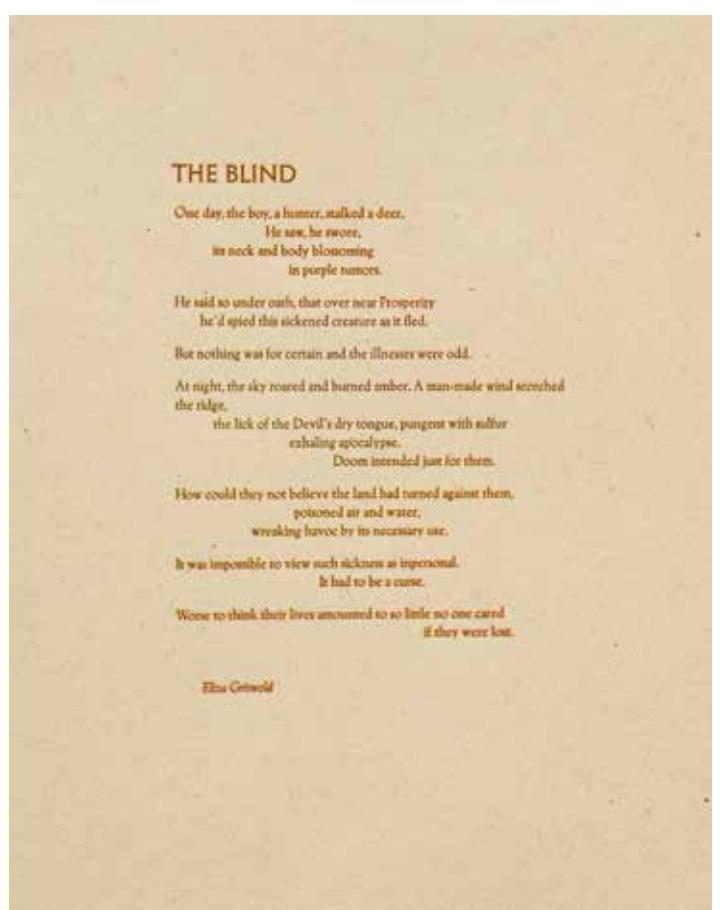
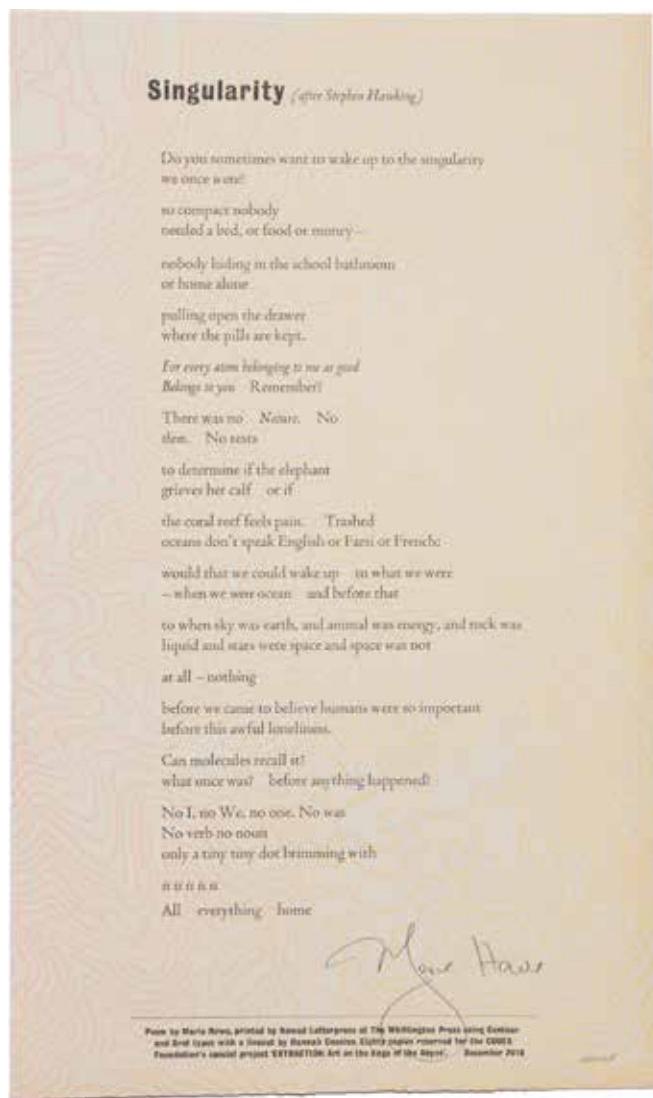
That is the edge on which these words are dancing: the edge between heaven and hell. It is an edge that humans forge wherever they go – and an edge that we are expert at turning a blind eye to.

One of the facts about heaven is this: there is more than enough. In this particular corner of heaven, for instance, there is more light and heat, more air and wood and water, fruit and grain and meat and fish, more granite and sandstone and limestone, iron and copper and silver and gold than anyone needs. More – but not an infinite amount. There is also more time than anyone needs – but not, again, an infinite amount. Fewer, in all probability, than another fifty million human lifetimes. Yet we as a species, we as a culture, are working hard to make it fewer still.

The grass will bear a lot of grazing and the shrubs a lot of browsing. The limb will bear some sawing, and the trees will bear some cutting, the earth will tolerate some digging, and the rivers and oceans and air will bear some gentle poisoning. But one of the salient facts about hell is that people who live there are never content. They not only want more than they have; they want more than there is. So the edge between heaven and hell gets sharper and closer. And those at the edge dance faster and faster.



Images from the printing of Words on the Edge. From left to right: Juan Pascoe holding up Forrest Gander's "A Clearing"; Natalie Diaz's "How the Milky Way Was Made" hanging to dry at Foolscap Press; the type set for "Singularity" by Marie Howe; Jason Dewinetz surveying the broadside for Rick Bass's "The Wild Marsh" at Greenboathouse Press.



Above: Eliza Griswold, "The Blind," Russell Maret, Printer, New York, New York. Eliza is a 2019 Pulitzer Prize winning poet.

Left: Marie Howe, "Singularity," Nomad Letterpress, Pat Randle, Printer, Whittington Court, England

Natalie Diaz, "How the Milky Way Was Made," Foolscap Press, Peggy Gotthold & Lawrence Van Velzer, Printers; Santa Cruz, California. Natalie Diaz was named a 2018 MacArthur fellow.



Forrest Gander, "A Clearing," Taller Martin Pescador, Juan Pascoe, Printer, Tacámbaro, Mexico. Forrest is a 2019 Pulitzer Prize winning poet.



Joy Harjo, "A Map to the Next World," Classic Letterpress, Norman Clayton, Printer, Ojai, California. In 2019, Joy Harjo became the first Native American U.S. Poet Laureate in history.

## WRITERS AND PRINTERS

MARGARET ATWOOD, "Time capsule found on the dead planet"  
Peter Koch, Printer

RICK BASS, "The Wild Marsh"  
Jason Dewinetz, Greenboathouse Press

WENDELL BERRY, "Questionnaire"  
Grey Zeitz, Larkspur Press

ROBERT BRINGHURST, "All Over the World"  
Richard Seibert, Printer

ANNEMARIE NÍ CHURREÁIN, "The Turf-Cutter Speaks"  
Jamie Murphy, The Salvage Press

PETER COYOTE, "Mining Words"  
Harry & Sandra Reese, Turkey Press

NATALIE DIAZ, "How the Milky Way Was Made"  
Peggy Gotthold & Lawrence Van Velzer, Foolscap Press

EDWIN DOBB, "Corrosion"  
Richard Wagener, Mixolydian Editions

DAVID JAMES DUNCAN, "One River"  
Chad Pastotnik, Deep Wood Press

FORREST GANDER, "A Clearing"  
Juan Pascoe, Taller Martin Pescador

ELIZA GRISWOLD, "The Blind"  
Russell Maret, Printer

JOY HARJO, "A Map to the Next World"  
Norman Clayton, Classic Letterpress

ROBERT HASS, "September, Inverness"  
Patrick Reagh, Printer

BRENDA HILLMAN, "Triple Moments of Light & Industry"  
Crispin & Jan Elsted, Barbarian Press

JANE HIRSHFIELD, "Ledger"  
Peter Koch, Printer

LINDA HOGAN, "Trail of Tears: Our Removal"  
Felicia Rice, Moving Parts Press

MARIE HOWE, "Singularity"  
Pat Randle, Nomad Letterpress

WILLIAM KITTREDGE, "The specific danger is us...."  
Aaron Cohick, The Press at Colorado College

ED LAHEY, "The Blind Horses"  
Aaron Parrett, The Territorial Press

BARRY LOPEZ, "In Antarctica...."  
Inge Bruggeman, INK-A! Press

EMILY MCGIFFIN, "Cerro Rico"  
Tara Bryan, Walking Bird Press

KAY RYAN, "The Niagara River"  
Marie Dern, Jungle Garden Press

GARY SNYDER, "Dillingham, Alaska, the Willow Tree Bar"  
Jonathan Clark, Artichoke Press

ARTHUR SZE, "Black Center"  
Thomas Leech, The Press at the Palace of Governors

GAYLORD SCHANILEC, "In Vento"  
Gaylord Schanilec, Midnight Paper Sales

KAZUAKI TANAHASHI, "Extraction"  
A calligraphic rendering of the Japanese character for "Extraction"

JAN ZWICKY, "Seeing"  
Carolee Campbell, Ninja Press

## QUESTIONNAIRE

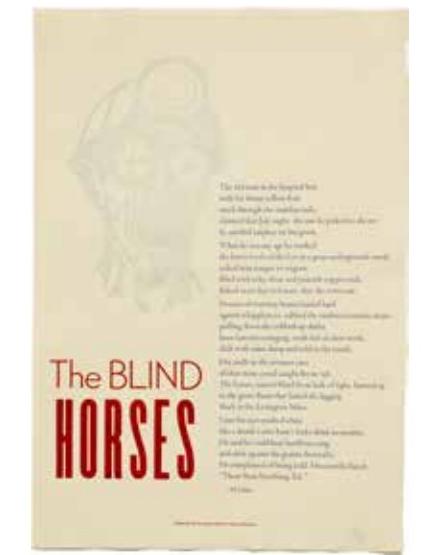
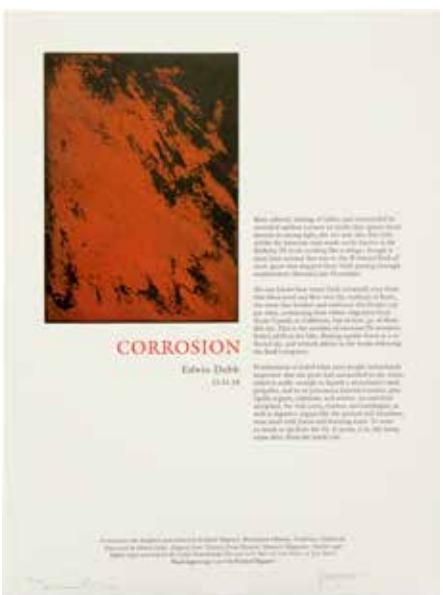
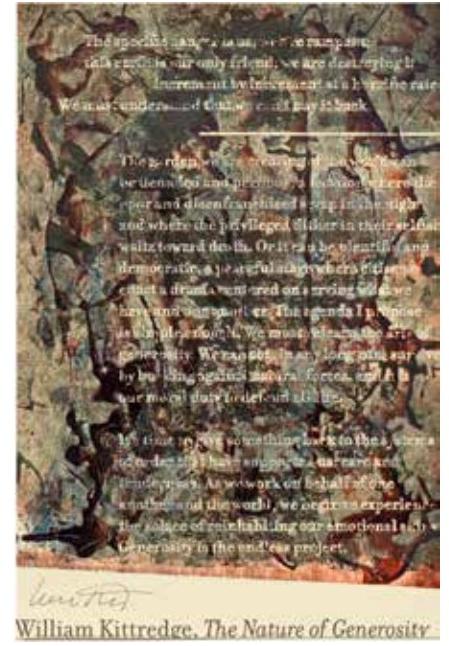
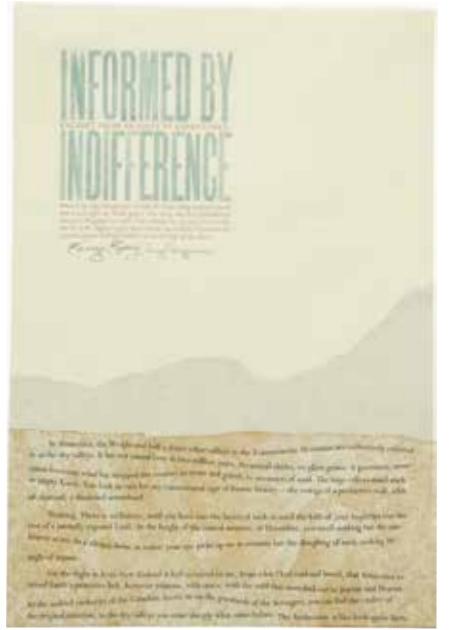
1. How much poison are you willing to eat for the success of the free market and global trade? Please name your preferred poisons.
2. For the sake of goodness, how much evil are you willing to do?  
Fill in the following blanks with the names of your favorite evils and acts of hatred.
3. What sacrifices are you prepared to make for culture and civilization?  
Please list the monuments, shrines, and works of art you would most willingly destroy.
4. In the name of patriotism and the flag, how much of our beloved land are you willing to desecrate? List in the following spaces the mountains, rivers, towns, farms you could most readily do without.
5. State briefly the ideas, ideals, or hopes, the energy sources, the kinds of security, for which you would kill a child.  
Name, please, the children whom you would be willing to kill.

—Wendell Berry



Copyright 2012 by Wendell Berry, from *New Collected Poems* (Counterpoint). Eighty copies are reserved for the CODEX Foundation's special project: EXTRACTION: Art on the Edge of the Abyss. This broadside was printed in 2018 by Larkspur Press, Monterey, Kentucky. 180 copies: \$2

Wendell Berry, "Questionnaire"; Grey Zeitz, Larkspur Press, printer, Monterey, Kentucky





Printer Richard Wagener examines his broadside print of Edwin Dobb's text "Corrosion," at Mixolydian Editions in Petaluma.



Gary Snyder signing copies of his poem "Dillingham, Alaska, the Willow Tree Bar", printed by Jonathan Clark at Artichoke Press in Mountain View, California.



Linda Hogan's, "Trail of Tears: Our Removal" on the press at printer Felicia Rice's Moving Parts Press in Santa Cruz.



Felicia Rice closely examines her print of Linda Hogan's, "Trail of Tears: Our Removal" at Moving Parts Press in Santa Cruz.



A copy of Marie Howe's poem, "Singularity" comes off the press at Nomad Letterpress in England; Pat Randle, Printer.

SELECTED  
**EXHIBITIONS**  
AND  
**EVENTS**

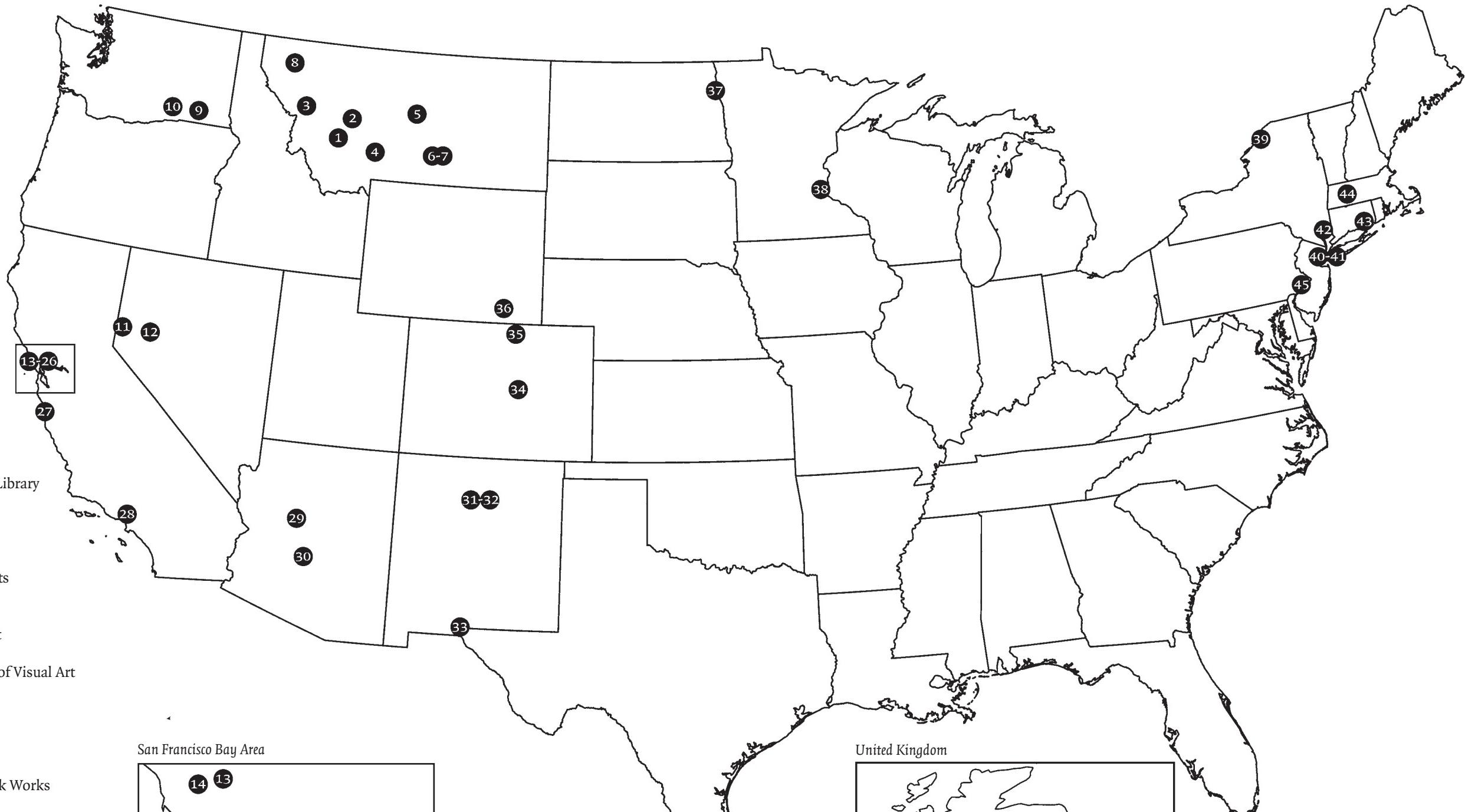


*“So many lives are on the line right now. This system is crashing. It’s crashing economically and it’s crashing ecologically. The stakes are too high for us not to make the absolute most of this moment.”*

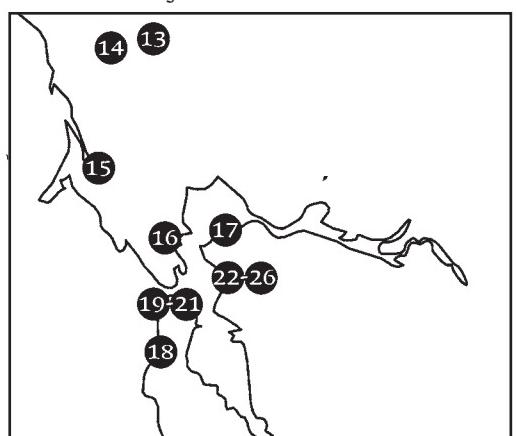
—Naomi Klein

Left: Ryan Keith Parker  
Cairn at Grinnell Glacier, MT (I)  
2019, archival pigment print

1. The Berkeley Pit
2. Holter Museum of Art
3. Missoula Art Museum
4. Old Main Gallery
5. Lewistown Art Center
6. Yellowstone Art Museum
7. Northcutt Steele Gallery
8. Hockaday Museum of Art
9. Maxey Museum
10. Gallery at the Park
11. Nevada Museum of Art
12. Churchill Arts Council
13. Calabi Gallery
14. Sebastopol Center for the Arts
15. Gallery Route One
16. Seager Gray Gallery
17. Richmond Art Center
18. Sanchez Art Center
19. San Francisco Center for the Book
20. SF Camerawork
21. Jack Fischer Gallery
22. Women Eco Artists Dialog
23. David Brower Center
24. KALA Institute
25. The CODEX Foundation
26. UC Berkeley Environmental Design Library
27. Center for Photographic Art
28. SUPERCOLLIDER
29. Natural History Institute
30. Phoenix Art Museum
31. Museum of Contemporary Native Arts
32. Santa Fe Poetry Garden
33. Rubin Center for Visual Arts
34. UCCS Galleries of Contemporary Art
35. Gregory Allicar Museum of Art
36. University of Wyoming Department of Visual Art
37. North Dakota Museum of Art
38. Minnesota Center for Book Arts
39. Richard F. Brush Art Gallery
40. Center for Book Arts
41. A.I.R. Gallery
42. No. 3 Reading Room and Photo Book Works
43. Cummings Art Center
44. Zea May Printmaking
45. Library Company of Philadelphia
46. Groundwork Gallery



San Francisco Bay Area



United Kingdom



By the time this book has been printed  
additional venues may have been added  
to the roster. Please check for updates at  
[www.extractionart.org/directory](http://www.extractionart.org/directory).

# EXHIBITION DIRECTORY

WWW.EXTRACTIONART.ORG/DIRECTORY

1. THE BERKELEY PIT, BUTTE, MT
2. HOLTER MUSEUM OF ART • 12 E Lawrence St, Helena, MT 59601
3. MISSOULA ART MUSEUM • 335 N Pattee St, Missoula, MT 59802
  - The Space of Hope: A Collective Response*, June 15 – October 16, 2021
  - Edge of the Abyss: Artists Picturing the Berkeley Pit*, May 18 – October 2, 2021
  - Jerry Rankin: Golden Sunlight*, May 18 – September 2, 2021
  - Pennies from Hell: Selections from the MAM Collection*, May 18 – September 2, 2021
4. OLD MAIN GALLERY • 129 E. Main St, Bozeman, MT 59715
5. LEWISTOWN ART CENTER • 323 W Main St, Lewistown, MT 59457
  - Cataclysm*, July 1 – July 31, 2021
6. YELLOWSTONE ART MUSEUM • 401 N 27th St, Billings, MT 59101
  - Extraction*, June 2021 – May 2022
7. NORTHCUTT STEELE GALLERY • Liberal Arts Building, 1st Floor, 1500 University Drive, Billings, MT 59101
8. HOCKADAY MUSEUM OF ART • 302 2nd Ave E, Kalispell, MT 59901
  - The Last Glacier*, 2021 dates TBD
9. MAXEY MUSEUM • 413-461 Boyer Ave, Walla Walla, WA 99362
  - Along the Columbia River: Maya Lin and the Confluence Project*, April 23 – July 30, 2021
10. GALLERY AT THE PARK • 89 Lee Blvd, Richland, WA 99352
11. NEVADA MUSEUM OF ART • 160 W Liberty St, Reno, NV 89501
  - Extraction*, May 11, 2019 – September 15, 2019
12. CHURCHILL ARTS COUNCIL • 151 E Park St, Fallon, NV 89406
13. CALABI GALLERY • 456 10th St, Santa Rosa, CA 95401
  - EXTRACTION: Art on the Edge of the Abyss*, May 29th – July 31st, 2021
14. SEBASTOPOL CENTER FOR THE ARTS • 282 S High St, Sebastopol, CA 95472
  - Ecstasy: Breathtaking Beauty of Nature*, January 9 – February 14, 2021
  - Recycling*, February 20 – March 28, 2021
  - Favorite Things: TREES*, April 3 – May 9, 2021
  - Black/White and Shades of Gray*, June 19 – July 25, 2021
  - FIBER ARTS X*, July 31 – September 12
  - EXTRACTION: Art on the Edge of the Abyss*, October 23 – November 28
15. GALLERY ROUTE ONE • 11101 CA-1, Point Reyes Station, CA 94956
  - Extraction: Response to the Changing World Environment*, June 2021 – August 2021
16. SEAGER GRAY GALLERY • 108 Throckmorton Ave, Mill Valley, CA 94941
  - Materiality Re\_Mined: The Cell Phone Looking at Itself*, July 2021
17. RICHMOND ART CENTER • 2540 Barrett Ave, Richmond, CA 94804
18. SANCHEZ ART CENTER • 1220 Linda Mar Blvd # B, Pacifica, CA 94044
  - Extraction: Response to the Changing World Environment*, June 2021 – August 2021
19. SAN FRANCISCO CENTER FOR THE BOOK • 375 Rhode Island St, San Francisco, CA 94103
  - Reclamation: Artists Books On The Environment*, dates TBD
20. SF CAMERAWORK • 1011 Market St floor 2, San Francisco, CA 94103
21. JACK FISCHER GALLERY • 1275 Minnesota St, San Francisco, CA 94107

22. WOMEN ECO ARTISTS DIALOG • 4227 Martin Luther King Jr Way, Oakland, CA 94609
23. DAVID BROWER CENTER • 2150 Allston Way, Berkeley, CA 94704
24. KALA INSTITUTE • 1060 Heinz Ave, Berkeley, CA 94710
25. THE CODEX FOUNDATION • 2203 Fourth St, Berkeley, CA 94710
  - Extraction: The Book Works of Peter Rutledge Koch*, by appointment through the end of 2021.
26. UC BERKELEY ENVIRONMENTAL DESIGN LIBRARY • 210 Wurster Hall, Berkeley CA 94720
  - Spectacles Of Small Scale Gold-Mining in Indonesian Borneo*, January 12 – May 15, 2021
27. CENTER FOR PHOTOGRAPHIC ART • San Carlos at, 9th Ave, Carmel-By-The-Sea, CA 93923
28. SUPERCOLLIDER • 808 N. La Brea Ave, Inglewood, CA 90302
  - EXTRACTION: Earth, Ashes, Dust*, dates TBD
  - Artificial Ecologies (Virtual Exhibition)*, July 5 – August 31, 2020
29. NATURAL HISTORY INSTITUTE • 126 N Marina St, Prescott, AZ 86301
30. PHOENIX ART MUSEUM • 1625 N Central Ave, Phoenix, AZ 85004
31. MUSEUM OF CONTEMPORARY NATIVE ARTS 108 • Cathedral Pl, Santa Fe, NM 87501
  - Exposure: Native Art and Political Ecology*, August 13, 2021 – January 23, 2022
32. SANTA FE POETRY GARDEN
33. RUBIN CENTER FOR VISUAL ARTS • 500 W University Ave, El Paso, TX 79902
34. UCCS GALLERIES OF CONTEMPORARY ART • 5225 N Nevada Ave, Colorado Springs, CO 80918
35. GREGORY ALLICAR MUSEUM OF ART • 1400 Remington St, Fort Collins, CO 80524
  - Reclamation: Recovering our Relationship with Place*, July 7 – September 19, 2021
36. UNIVERSITY OF WYOMING DEPARTMENT OF VISUAL ART • University of Wyoming, Laramie, WY 82072
  - Extraction: An Expansive Survey of Land Use Through the Lens of Consumption*, June 1 – September 3, 2021
37. NORTH DAKOTA MUSEUM OF ART • 261 Centennial Dr, Grand Forks, ND 58202
38. MINNESOTA CENTER FOR BOOK ARTS • 1011 S Washington Ave #100, Minneapolis, MN 55415
39. RICHARD F. BRUSH ART GALLERY • 23 Romoda Dr, Canton, NY 13617
  - Rachael Marne Jones and Ryan Keith Parker*, August 15 – October 11, 2021
40. CENTER FOR BOOK ARTS • 28 W 27th St, New York, NY 10001
41. A.I.R. GALLERY • 155 Plymouth St, Brooklyn, NY 11201
  - artists@HOME*, dates TBD
42. NO. 3 READING ROOM AND PHOTO BOOK WORKS • 469 Main St, Beacon, NY 12508
43. CUMMINGS ART CENTER • 270 Mohegan Avenue, New London, CT 06320
  - FIRE and ICE*, September 1 – October 15, 2021
44. ZEA MAY PRINTMAKING • 320 Riverside Dr, Florence, MA 01062
  - EXTRACCTIONS: Green to the Extreme*, October 4 – November 1, 2020
  - EXTRACCTIONS: Green to the Extreme*, 2021 dates TBD
45. LIBRARY COMPANY OF PHILADELPHIA • 1314 Locust St, Philadelphia, PA 19107
  - Coal: Time, Material and Immensity*, May 3 – August 28, 2021
46. GROUNDWORK GALLERY • 17 Purfleet St, King's Lynn PE30 1ER, UK

Additional venues will likely be added to the roster after this book has been printed. For the latest updates and exhibition information please visit [www.extractionart.org](http://www.extractionart.org). Due to the changing situation of the ongoing COVID-19 pandemic, certain events and exhibitions are subject to postponement and/or cancellation.

# MISSOULA ART MUSEUM

WWW.EXTRACTIONART.ORG/MAM

## THE SPACE OF HOPE: A COLLECTIVE RESPONSE

Carnegie Gallery

June 15 – October 16, 2021

The title of this exhibition is taken from a quote by author Rebecca Solnit: “We don’t know what is going to happen, or how, or when, and that very uncertainty is the space of hope.”

Rather than focus on the devastation wrought by the intertwined processes of industrialization, extraction, climate change, cultural displacement, and colonization, this juried group exhibition will imagine solutions and amplify voices that serve as a counter-narrative to the historical power structures that are inherent with extraction. MAM invites feminist approaches, Indigenous voices, and underrepresented viewpoints. Artists are encouraged to submit works that focus on healing, reparations, nurturing, cooperation, unity, and problem solving as a global society.

The exhibition is open to artists of all backgrounds, working in any fine art or craft medium. Submissions can be for single- or multimedia projects by solo or collaborative practitioners. Submissions of up to three works to be considered are due April 2, 2021 with notification by April 30, 2021 and work due at MAM on May 28, 2021. Selected artists will receive an exhibition honorarium, as well as support for shipping and transit. MAM is grateful for project support from the Cultural Vision Fund.

## EDGE OF THE ABYSS: ARTISTS PICTURING THE BERKELEY PIT

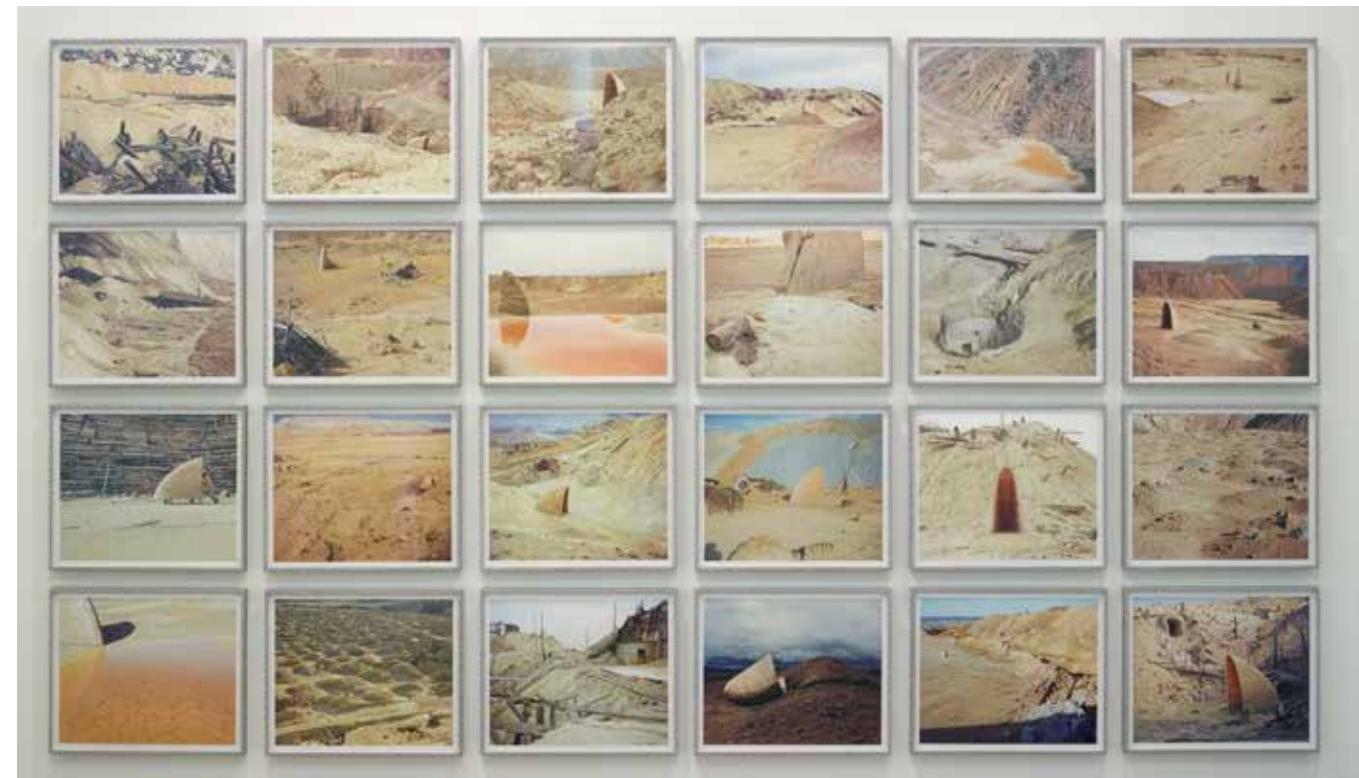
Aresty Gallery

May 18 – October 2, 2021

Contemporary artists living and working throughout the region have a history of making creative works and actions in response to the largest open pit mine in the state of Montana, the Berkeley Pit in Butte. This exhibition assembles, for the first time, projects by Jean Arnold, Eben Goff, Kristi Hager, Marcy James, Peter Koch in collaboration with Didier Mutel, and Nolan Salix. These artists present a dynamic range of perspectives in reaction to this undeniable feature of the Western landscape and psyche—from awe at the grandeur of landscape to concerns about land use and environmental impact. Arnold’s (Salt Lake City, UT) acidic abstractions of the Pit connect the history of modernity to copper mining, energy consumption, and globalization. Goff (Los Angeles, CA) presents part of his *Butte Speculator* series, a decades-long response and documentation of a poetic performance at the Berkeley and Continental Pits. Hager (Missoula, MT), lived and worked in Butte from 1984 to 1997 and created the Cool Water Hula art action (performed in 2000 and 2010) which assembled 150 dancers to celebrate water and to connect with each other and the Pit. James (Missoula, MT) also lived in Butte and her photos celebrate the community and its losses. Salix (Dillon, MT) paints images of industrial impact onsite using materials or byproducts gleaned from industrial processes. In addition, EXTRACTION organizer and artist Peter Koch (Berkeley, CA), in collaboration with Didier Mutel (Orchamps, France), presents *The Atlas of Hell*, a large-scale, multi-sheet etching that makes comparisons between the Pit to the layers of hell described in Dante’s *Inferno*.



Left: Jean Arnold, *Berkeley Pit: Legacy* (MT, copper), 2012, oil on canvas, 42 by 42 inches, courtesy of the artist;  
Below: Eben Goff, *Butte Speculator*, 2015, 24 Framed archival pigment prints, 17 1/2 by 20 3/4 inches each, 76 by 136 inches overall, courtesy of the artist





Top: Kristi Hager, Cool Water Hula, 2000, performance, image courtesy of the artist; Bottom: Marcy James, Pilot Butte, fuji provia film, 4 by 5 inch pinhole camera from a sheet of cardboard, lens broken window from site, courtesy of the artist

## JERRY RANKIN: GOLDEN SUNLIGHT

Shott Family Gallery  
May 18 – September 2, 2021

Rankin is one of Montana's most significant living artists. He was mentored by two of the titans in Montana's early modernist art movement, Rudy Autio and Robert DeWeese. Rankin earned his MFA in printmaking from the University of Montana in 1972 before pursuing postgraduate work at Montana State University, studying primarily printmaking, painting, and sculpture. His career as an art teacher and professor began in Alaska in 1964, before returning to Montana to teach in the Great Falls school system. Since 1985, he has devoted his life to painting full-time. During the course of his decades-long career as an artist, Rankin has developed a distinctive visual language. His endless curiosity and investigation of the natural world through his studio practice continues today. Rankin's images are meditations on the land and this newest print series focuses on the environmental threats posed by the Golden Sunlight Mine near his home in Whitehall, Montana.

"Ecological residue from hard rock mining has scarred and poisoned land and water far beyond its boundaries. These actions playing against the friction of seismic plate shifting create strong visual metaphors and figure prominently in my latest work. In 2015, I began a series of drawings, which I developed into prints exploring the expansion of the Golden Sunlight mine near Whitehall, Montana. After attending the Lucy Lippard lecture on the effects of mining on landscape and the environment at the Missoula Art Museum [in 2017] I recognized that there was an audience in Montana for this information. Within each block or panel of the exhibit I've illustrated the progressive vandalized and irreparable landscape, the increasingly toxic waste pond lake, and the chewing and tearing at the seams of the earth caused by rock removal; the devastation occurring without conse-



Jerry Rankin, *Golden Sunlight VII*, 2016, collograph, 22 by 30 inches, courtesy of the artist

quence, without imagination. Centered in an earthquake zone, a four point quake could easily slide the entire poisonous mass down the mountain and into the Jefferson River, a stream feeding first into the blue ribbon fishing waters of the Madison and Gallatin Rivers and joining the Missouri within a few miles. Points of stress are indicated by magenta symbols. The waste pond lake is shown in acidic layers of virulent greens and reds. The increasing network of lines throughout might represent an EKG map of the circulation system of the mountain. The work is another response to the dangers that Montana's industrial climate poses to the entire range of ecological systems."

— Jerry Rankin

This exhibition was organized by the Missoula Art Museum (MAM) and is touring the state under the auspices of the Montana Art Gallery Directors Association (MAGDA).



Jerry Rankin, *Golden Sunlight I*, 2016, collograph, 22 by 30 inches, courtesy of the artist



Edgar Smith, *Butte vs. the Grand Canyon*, 2008, oil on panel, 13 by 26 inches, Missoula Art Museum, Bequest, David Moomey, 2019.03.11

## PENNIES FROM HELL: SELECTIONS FROM THE MAM COLLECTION

Autio Gallery

May 18 – September 2, 2021

Included are featured pieces from the MAM Collection which focus on the effects of extraction, including George Gogas' enigmatic painting *M-M Cocktail: Ingredients: 1 Part Missoula Air, 1 Part Milltown Water* which refers to the inversion pollution in the Missoula Valley, coupled with the problematic legacy of Milltown, a blue-collar community which lies seven miles to the east of Missoula. The Milltown dam at the confluence of the Clark Fork and Blackfoot rivers historically aided timber extraction and the nearby sawmill. The dam, downstream from

the open-pit mines of Butte and the smelter in Anaconda, retained mine waste laden with heavy metals from the Clark Fork River, and was declared a Superfund site, resulting in years of remediation. Also included in the exhibition are photographer Mark Abramson's vibrant semi-abstract aerial views in the *Montana Legacy Suite*, such as tailings, settling ponds, and Superfund sites, Gennie DeWeese's iconic rendering of Montana clear cuts using cattle markers, Edgar Smith's stunning landscape painting contrasting the Berkeley Pit to the grandeur of the Grand Canyon, Susan Barnes' hand-painted photographs of impacted sites and communities, and drawings of the Hanford nuclear site in eastern Washington, whose fallout has moved on downwind through air currents and aquifers to Montana, by Karen Rice, among others.

## CORWIN CLAIMONT: TWO HEADED ARROW/ THE TAR SANDS PROJECT

2020, 64 pages, color images, published by the Missoula Art Museum, 2020.

Corwin Clairmont (Confederated Salish and Kootenai Tribes of the Flathead Nation) is one of the most important contemporary Native artists to use printmaking, photography, assemblage, and collage to call attention to interrelated environmental and governmental injustices through his artwork.

A new catalog documenting Clairmont's recent project and exhibition *Two Headed Arrow/The Tar Sands Project* is now available. The exhibition was on view at the Missoula Art Museum (MAM) from March to August, 2018, and the catalog—part artist's book, part project documentary—includes essays from Dr. Kathryn Shanley (Nakoda), Gail Tremblay (Onondaga/Mi'Kmaq), Stephen Glueckert, and Jaune Quick-To-See Smith (Salish-Kootenai, Métis-Cree, Shoshone-Bannock) and Neal Ambrose Smith (Salish-Kootenai). The essays focus on the environmental disaster caused by Tar Sands mining, Clairmont's career as a conceptual and installation artist, his indigenous identity, and his continuum in the canon of contemporary Native artists and art history.

*Two-Headed Arrow/The Tar Sands Project*, a wide-ranging conceptual and performative piece that covered nearly 900 miles and is the culmination of more than two years' work. In his essay, MAM Curator Emeritus Stephen Glueckert states, "[Corky's Tar Sands] journey began the summer of 2014 in Missoula, Montana and ended at Suncor mining operations at the Athabasca Tar Sands in Alberta, Canada. It is significant that the Missoula Art Museum presented this project, as the museum vision is to embrace contemporary art and regional works of integrity. Importantly, MAM's mission also has a stated commitment to contemporary Native artists."

Every fifty miles along the route, Clairmont stopped and repeated the same act. First he placed a print of a two-headed arrow on the ground oriented north to south. Then he positioned a gummy bear on each cardinal point surrounding the arrow. Clairmont photographed each installation at its outdoor site and documented the environment with photographs reflecting the cardinal directions—North, South, East, and West. Then, Clairmont ripped the printed arrow in half, leaving one head pointing north with the gummy bears in place to disintegrate in the weather, taking the other half with him. At his final destination in Fort McMurray, Clairmont chartered a plane and took aerial photographs of the tar sands mining sites—gray landscapes barren and bereft of wildlife or forests.



Confederated Salish and Kootenai Tribal flag flying over Standing Rock

In the exhibition, the half-prints that Clairmont retained are used to create new works related to each of the thirty-seven sites along the Missoula-to-Fort McMurray trip. Using the same process, Clairmont created unique works from sites around the country and in China. One site is at Standing Rock in North Dakota, and connects the Dakota Access Pipeline controversy to this project, years after Clairmont's visit to the tar sands. These works remind the viewer that the consequences of decisions made in one place and time affect all life on the planet.



Left: Corky at First Friday; Right: Corwin Clairmont on the steps of the Missoula Art Museum



sions made in one place and time affect all life on the planet.

Dr. Kathryn Shanley, Chair of Native American Studies (NAS) at the University of Montana (UM), reflects in her essay *Spatializing 'Heart': Corky Clairmont's Journey to the Tar Sands and Back*, "Because Corky Clairmont is an enrolled member of the Confederated Salish and Kootenai Tribes who grew up on the Flathead Reservation, he invites us to see the world along his road trip to, from, and at the tar sands site through his Indigenous perspective. And although he would be the first to admit he does not speak for other Indigenous people, we can trust that he has an understanding of what "homeland" means. We can, therefore, readily surmise that he is tackling the question regarding what has happened to the Indigenous people of northern Alberta whose homelands are being and, in many senses, have been, destroyed."

Artist, writer, and poet Gail Tremblay writes in her catalog contribution, *Art to Help Save the Earth*,

"Indeed, this focus on Indigenous cultural values certainly remains true of the exhibition *Corwin Clairmont: Two-Headed Arrow/The Tar Sands Project*. This exhibit documents a major conceptual art series he began working on in 2010 when he noticed [350 foot long, 664,000 pound Megaload] trucks on Montana highways near his home moving massive equipment to companies mining tar sands in Canada. Aware that producing oil from the tar sands is extremely destructive to the environment, Clairmont began to do extensive research on the issue. He took trips to the Suncor Company, a fifty-square mile tar sands mining site near Fort McMurray in Alberta, first in 2011 and then in 2014. On both trips he took photographs and toured the site. Before he traveled to the Suncor Company in 2011, Clairmont had never seen the massive environmental destruction caused by tar sands mining, and immediately realized why it is called the "dirtiest oil in the world" by activists like Winona LaDuke. He was shocked by the scale of the devastation of the habi-



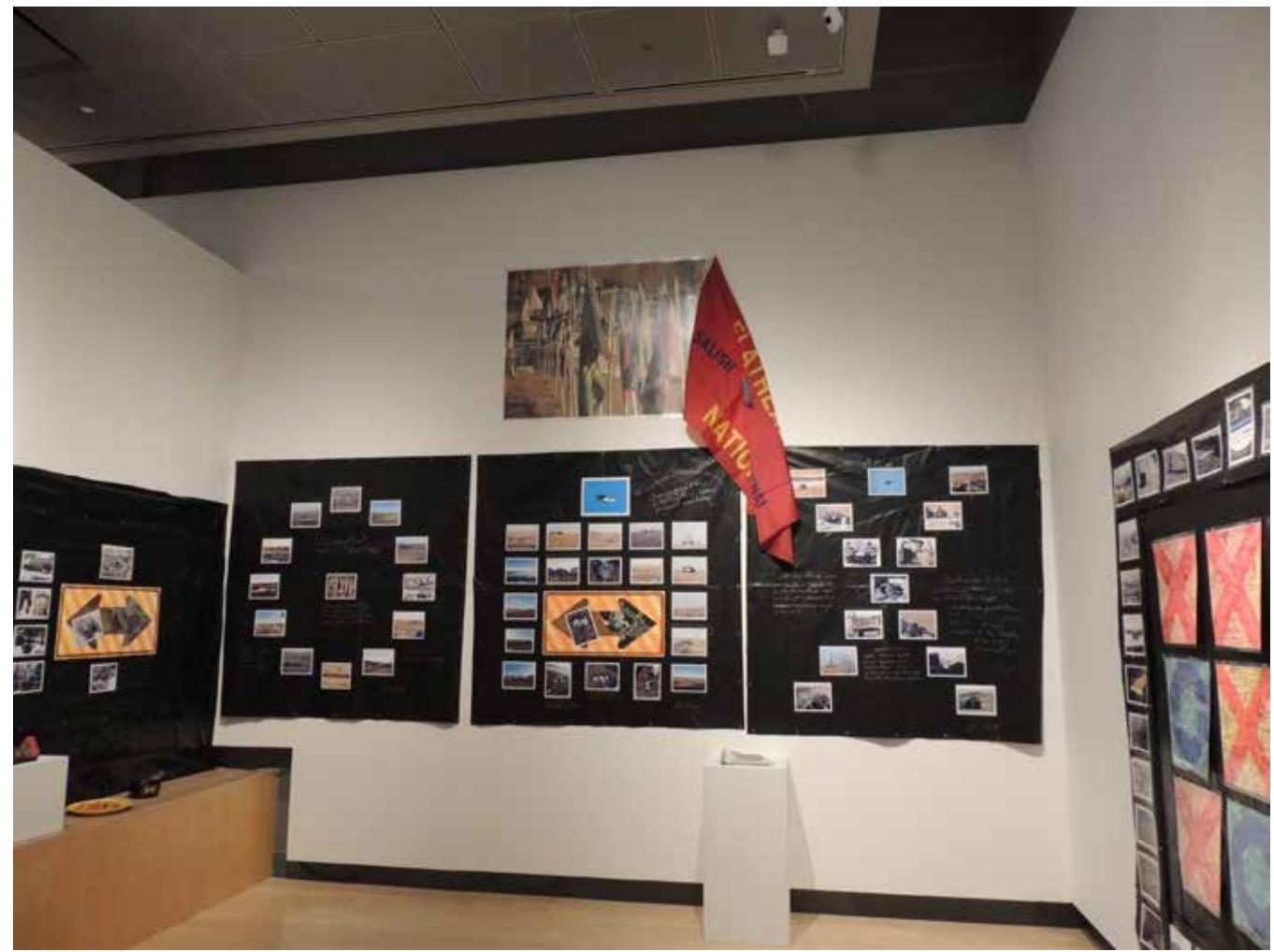
Photograph courtesy of Corwin Clairmont

tat caused by the waste produced by this method of producing oil. He went home and began to formulate plans to design artworks he could use to help viewers understand the need to protect the plants, animals, and humans from the massive pollution caused by tar sands mining."

Artist Jaune Quick-To-See Smith and her son Neal Ambrose Smith, Department Chair and Professor at the Institute of American Indian and Alaska Native Culture (IAIA) in Santa Fe, co-write on how Clairmont's process is an inseparable aspect of his Indigeneity:

"In speaking to Corky [...] he related that we touched on an important aspect of his work—nomadic travel. Corky went on to say that several of his current and past works have involved travel and specific site activity as well as the documentation that

related to the project concepts. He went on to say that our mention of DNA as it applies to historical/ancestral nomadic travel makes perfect sense as a factor in understanding his artwork or projects from a tribal perspective. Corky stated that 'The nomadic life was about survival. The political and social commentary found in my work is about the preservation of indigenous culture, place/environment and our homelands.' We see Corky's art tied to this process in the deepest way. He may be using modern-day tools or media or what is titled conceptual art like Fluxus, an art group that was anti-art, anti-commercial, and experimental, but we see Corky following a pattern with his art that moves across the land much in the same way we did in the ancient, age-old process with a planned mission and with a social relevance. Corky's work does both; in fact, it



Corwin Clairmont, Standing Rock, installation, Missoula Art Museum

does more than that. Corky goes about each phase of his deeply thought-out construct with insightful, possibly scientifically-rendered projects, mapping and naming and making planned trades of taking something from each site and leaving something there for posterity, always knowing that it will have a half-life and eventually join the earth again. He photographs, makes molds, charts, sews things, prints signage, constructs maps, talks to people on his journey, keeps journals, flies in planes to view the land, and calculates mileage between test sites. He is doing what we would have done in tracking a buffalo herd across the prairie. Yes, there is a similarity, there is a continuum."

Clairstrom's commitment to environmental activism and opposing the destructive practices of environmental degradation and extraction on such

a massive scale results in thought-provoking art actions where he physically engages in a whole process documented in this publication. Of the project, Clairmont says, "The work is also a commentary on the Indigenous People's close relationship to the land/environment. It is a site-specific artwork starting at the MAM, then continuing the journey with random fifty mile stops to the Fort McMurray, Canada tar sand mining sites. At one time there were no borders and the resources provided in the natural world or order was to be understood and respected. Keeping the balance was the rule and that impacted all important decisions to be made. A high standard of living."

Catalogs are available by order through the Missoula Art Museum.



## MONTANA LEGACY

### CERAMIC WORK BY STEPHEN BRAUN

Montana-based ceramist Stephen Braun's wall-based sculpture *A Montana Legacy* (2011), in the collection of the Missoula Art Museum, depicts environmental destruction, land use issues, the mining, timber and oil industries, and humanity's disassociation from nature. MAM acquired this work because it is an important reflection of Rocky Mountain West by a nationally-renowned contemporary artist. The work was acquired in 2014 as a purchase with partial support from Virginia Moffett, Dan Weinberg, and Roger Barber.

Constructed from ninety-one separate bas-relief ceramic tiles that collectively form a map of the state of Montana, *A Montana Legacy* presents a grim picture of the inheritance from this "Last Best Place." Using the medium of raku—often perceived as delicate, low-fired, and decorative—Braun details oil pipelines, derricks, and refineries that reference the Yellowstone Pipeline, fracking, and the refineries near Laurel and outside of Billings such as CHS Assembly Site 1, Exxon Mobil, Phillips 66, and the most nefarious sounding, Jupiter Sulphur. The pipeline has a history of spills into the Yellowstone River, the longest undammed river in the lower forty-eight. Research into the history of Yellowstone oil spills provides a volley of evidence of just how prevalent these disasters are—2011, 2015, 2017 and 2019.



Also depicted in *A Montana Legacy* are images such as the distinctive downward spiral of open-pit mines, jumbled heaps of barrels—whether filled with oil or other chemicals is unclear—scenes of clear cut forests, and tires sinking into a morass of effluence. Braun illustrates species of concern, the wildlife impacted by these changed and toxic environments and whose status is endangered or threatened, the pallid sturgeon, bull trout, and grizzly bears. The northern border of Montana, the division between the United States and Canada, is represented as a barbwire fence, a prescient comment on the politicization of the border that pervades current affairs.

Braun says, "I love the planet and all of its beauty. But all I see is loss. I see the scars we leave to support our consumptive nature. We leave a landscape of heartache... it breaks my heart to see how ubiquitous we've been in radically changing our environment."

Braun's solo exhibition at the Missoula Art Museum *Hindsight and Foresight Are 20/20*, on view through winter 2020, serves as a prologue to the following summer's Extraction Project. Braun created much of the work for this exhibition at his home studio and as a resident at the LH Project in Joseph, Oregon. MAM has enjoyed a long relationship with the artist, who has participated in several past MAM exhibitions including the 2015 Montana Triennial and Persistence in Clay in 2011.

—Brandon Reintjes, 2020



Above: Stephen Braun, *A Montana Legacy*, 2011, raku ceramics, approx. 4 by 6 feet, Missoula Art Museum Collection, purchased in part with support from Virginia Moffett, Dan Weinberg, and Roger Barber © Stephen Braun; Facing page, left: Stephen Braun, *Map of Montana*, 2013, 36 by 48 inches, raku ceramics; Right: Stephen Braun, *Dueling Liars*, 2019, raku ceramics, approx. 4 by 5 feet



Stephen Braun, *Choices*, 2017, 24 inches by 39 inches by 12 inches, raku ceramics



Stephen Braun, *The Hoarder*, 2009, 24 inches by 30 inches by 8 inches, raku ceramics



Christopher Boyer, Antelope, aerial photography

## HOLTER MUSEUM OF ART

[WWW.EXTRACTIONART.ORG/HOLTER](http://WWW.EXTRACTIONART.ORG/HOLTER)

### BEYOND THESE MAPS: PORTRAITS OF EXTRACTION LANDSCAPES

Christopher Boyer

We are overwhelmed by landscape data today. The popularity of GIS, advances in remote sensing, and the universal accessibility of Google Earth allows for the aggregation and communication of huge volumes of landscape data. But by abstracting physical form and process into code and representing it symbolically, we sometimes forget what the landscape actually looks like, and lose sight of the small individual realities that contribute to complex landscape stories.

I have always been drawn to the often indistinct lines between trash and treasure on the landscape—open pit mines, farm dumps, and unexamined in-

frastructure of modern culture. In 2013, I flew Edwin Dobb, a co-founder of the Extraction Project, on an aerial tour of the massive oil and gas development in the Bakken oilfields of Eastern Montana and the Western Dakotas. His narrative of the social transformation that was woven into the remaking of that landscape further reinforced my appreciation for the realities beneath the abstractions.

The minute detail of my maps—revealing footprints, discarded trash, and people engaged in the dailyness of actually transforming the landscape—incorporate an element of time, and consequently, a human scaled narrative that conventional photo maps do not possess. I think of them as an archaeological excavation of the cultural artifacts beneath the abstractions of landscape data. My oblique or angled images show the broader landscape with the inherent objectivity unique to aerial photography. Because selective framing is not possible, the images capture instead the context of a subject and remind us of the exchange of influences between

natural or managed processes and their adjacent landscapes. At a time when language about how we integrate our cultural and ecological systems is marked by shrill exaggeration, I feel that photographs present important quantitative and ethical principles with quiet, irrefutable dignity.”

### TRACY LINDER: SHILL/SHELL

Tracy Linder's Shill/Shell installation consists of hollow resin bird forms covered with cottonwood leaves jutting out from the wall on brass cradles. Alternating a face-up or face-down position, each bird is flightless, no legs or eyes to reveal life or lifelessness; a sedentary pose that allows for introspection. Parts of each bird have been cut away where the leaves do not meet showing the hollowness of the form. The cottonwood leaf was chosen as a signifier of strength and survival. Cottonwood trees dot the prairie as towering signs of water presence and roots that run deep enough to survive years of drought. These trees are often a sole opportunity for nesting.

Each bird in the Shill/Shell series is unique, allowing for individual circumstances in strife and survival. The birds are displayed at different heights and positions with the shadows becoming an integral part of the overall installation. The title "Shill/Shell" suggests both impostor and protector as a means to consider the balance or imbalance in each act we take. Are we friend or foe to our environment? Most often the answer is complicated. We have used the bird as a sentinel species justified to save human lives. Early miners had no other way of measuring the toxicity of the air than to bring along a canary. Yet the practice continued well after science and technology could detect the presence of carbon monoxide, as the birds had become a cultural tradition. The canaries had become beloved associates.

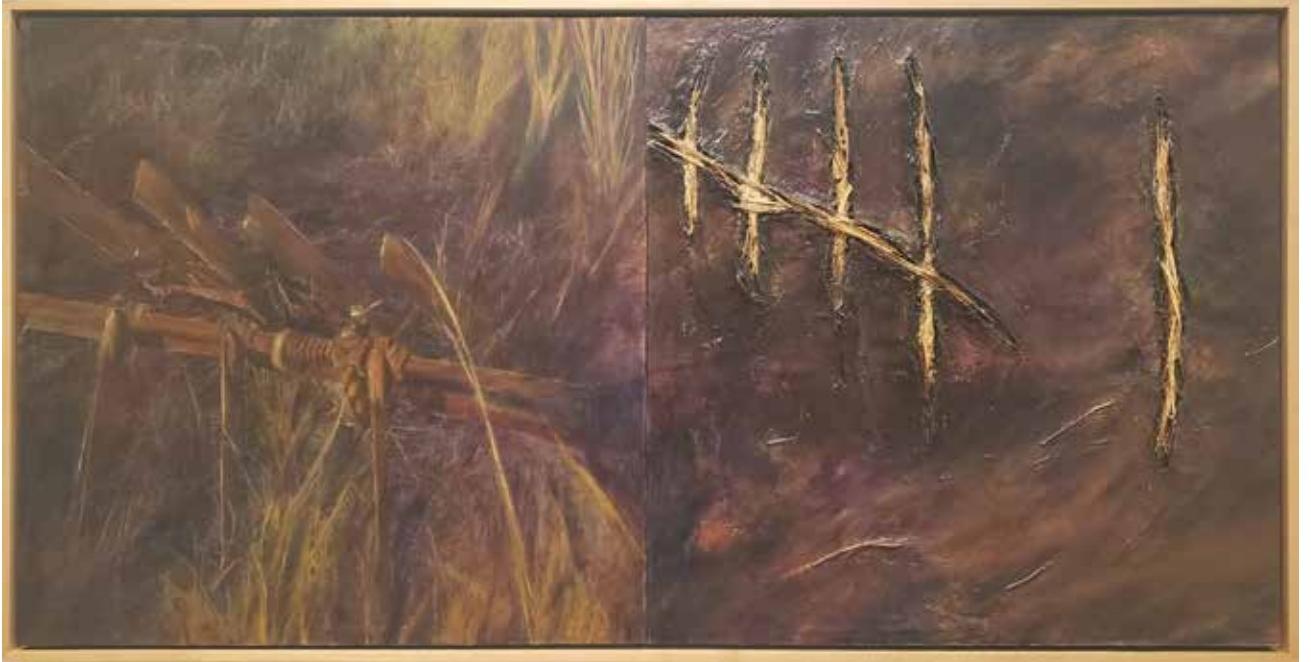
New studies disclose that we have 3 billion fewer wild birds than in 1970; while many wetland bird populations are flourishing. Thus, our priorities are revealed. A silent, hardly noticeable decline in our



Tracy Linder, Shill/Shell, hollow resin bird forms covered with cotton leaves

everyday awareness points to our collective complicity. There are simple steps to address much of this crisis, such as altering window appearance or monitoring cats. Loss of habitat, chemical use, pollution, and climate change, however, are all difficult to remedy.

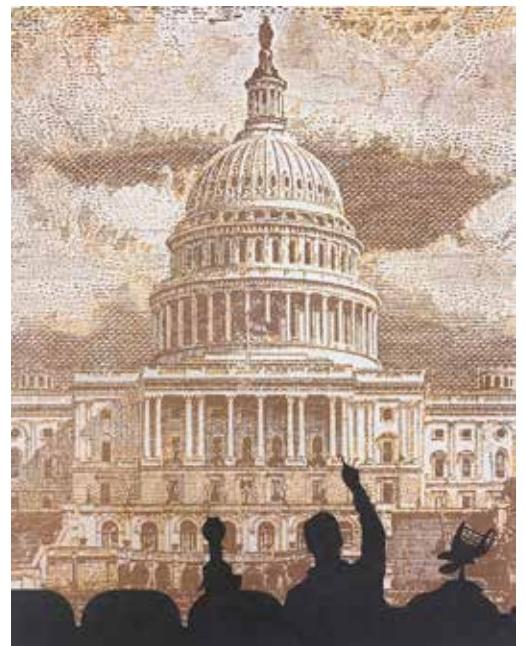
Shill/Shell offers the opportunity to learn about our native bird species, to consider their history, learn of migration pathways and to find ways of participating in keeping them safer or increasing their populations. Although birds are vulnerable to many human-caused obstacles, they can also be exceptionally resilient and adaptable in certain environments. From building nests on buildings, to utilizing waste as nest material, to moving to new areas, birds are far cleverer and more adaptable than we give them credit.



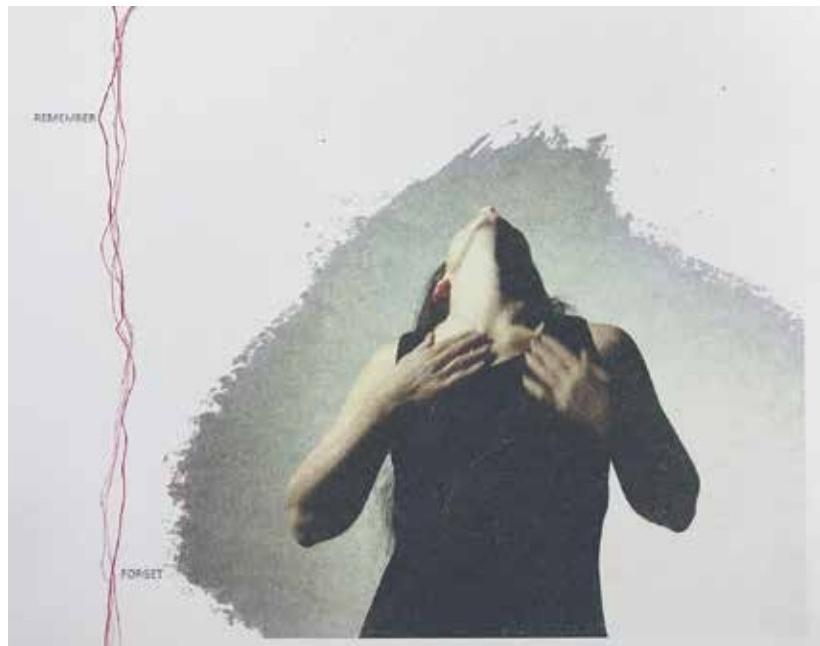
Above: Bently Spang, Still from performance: *Stratum Reset*, 2019; Top: Tracy Linder, *Who's Counting? (Abandoned Disc Scraper)*, 1996, Acrylic, oil, wax, straw, photograph on canvas; 30 by 60 inches; Collection of the Yellowstone Art Museum



David Hanson, #C-111-9 Coal Strip Mine, Power Plant and Waste Ponds, 1984, Color print, 11 by 14 inches. Collection of the Yellowstone Art Museum



Above left: Sukha Worob, *Someone, Somewhere is Watching and Laughing*, woodcut, 14 by 18 inches; Above right: Melissa Dawn, *Forget/Remember*, image transfer relief, 14 by 18 inches



## LEWISTOWN ART CENTER

[WWW.LEWISTOWNARTCENTER.NET](http://WWW.LEWISTOWNARTCENTER.NET)

### CATACLYSM

Mary Callahan Baumstark

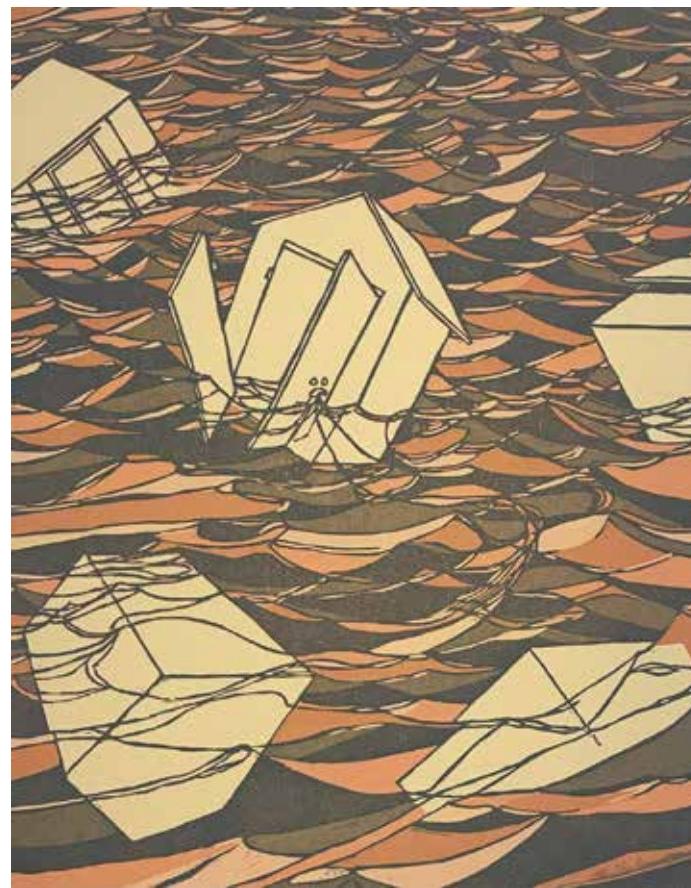
CATACLYSM, sponsored by the Robert & Gennie DeWeese Gallery at Bozeman High School, is a portfolio exchange curated in response to the current global political climate. It includes artists from around the country and Canada who were asked to create work based around their hopes and fears given the current global state of affairs.

In 2012 Nicole Geary brought together a group of artists with the intention of creating works in response to the potential of a doomsday event. The exchange asked participants to explore their experience of the global phenomenon of doomsday predictions. CATACLYSM is a response to the ebb and flow between angst and hope that many of us are experiencing both nationally and globally. We are emerging out of what was experienced by many as a time in American history defined by movement

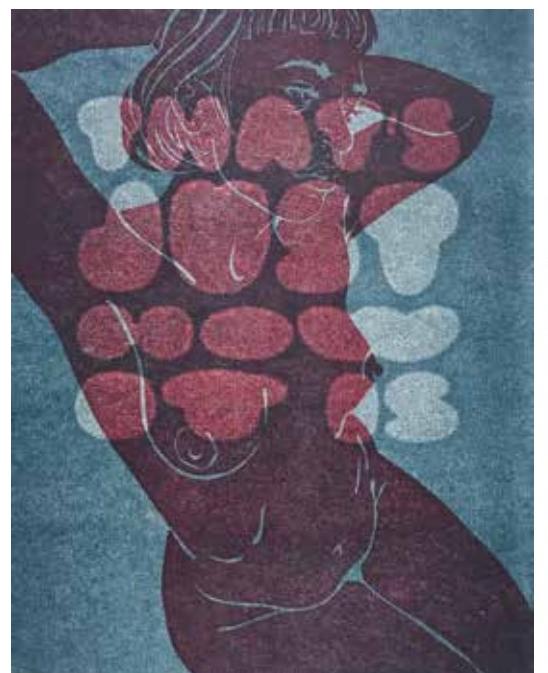
toward a brighter, more inclusive and, at the very least, more tolerant future. In a divisive post-2016 (and post-2020) U.S., the climate feels, once again, charged with the possibility of cataclysm. This portfolio is in no way unbiased. It is meant to be a platform for those of us that feel angst about the direction of our country. It is meant to stand in the face of darkness and acknowledge both our fears and give voice to our hopes as we tread into the weeks, months, and years ahead.

Artists include Douglas Bosley, Barry Roal Carlsen, Christa Carleton, Todd Christensen, Melissa Dawn, April Dean, Stefanie Dykes, Lena B. Ellis-Boatman, Leslie Friedman, Nicole Geary, Sanaz Haghani, Jon Irving, Karl LeClair, Gregory Martens, Abe McCowan, Stephanie Newman, Matthew Presutti, Andrew Rice, Seth Roby, Melissa Schulenberg, Shelley Thorstensen, Summer Ventis, Eric Wilson, and Sukha Worob.

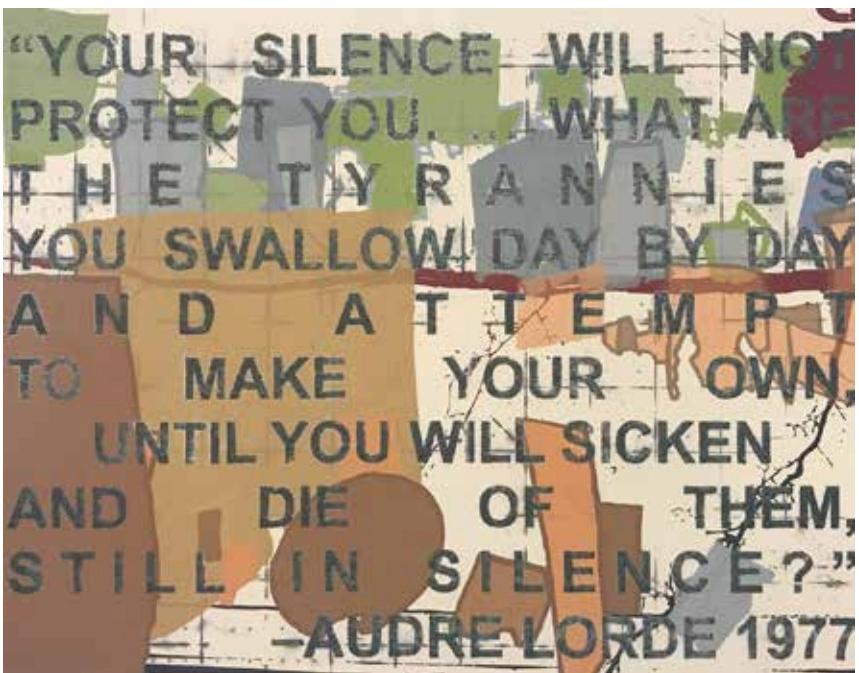
CATACLYSM is on view from July 1, 2021 to July 31, 2021 at the Lewistown Art Center.

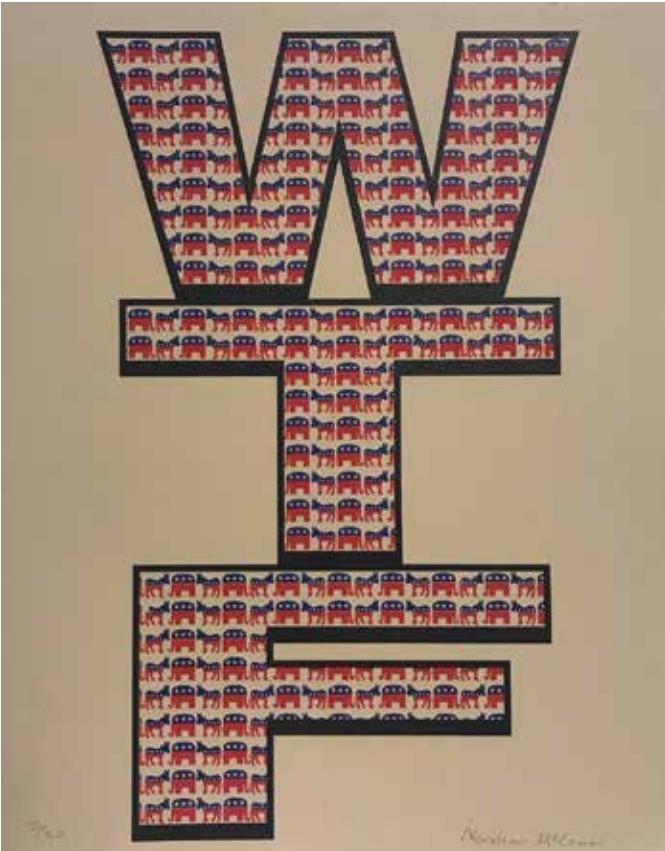


Above left: Todd Christensen, *Flood*, relief, 14 by 18 inches; Above right: Eric Wilson, *Don't Get M.A.D. Get Even*, lithograph, 14 by 18 inches

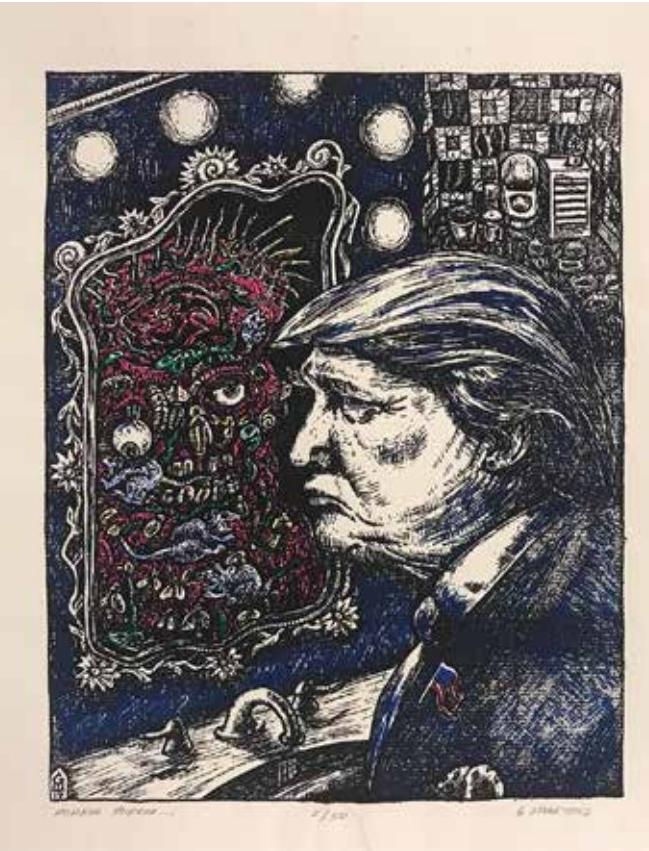


Above left: Christa Carleton, *That's Just How it Is*, pressure print relief, 14 by 18 inches; Above right: Lena B. Ellis-Boatman, *No Ban, No Wall (DTW)*, digital (folded print), 14 by 18 inches





Above left: Abe McCowan, Untitled, silkscreen, 14 by 18 in; Above right: Gregory Martens, Mirror, Mirror, 6-color silkscreen, 14 by 18 in



Above left: Stefanie Dykes, GSEMN Cataclysm, etching, 14 by 18 in; Above right: Stephanie Newman, Waiting, letterpress, 14 by 18 inches



Leslie Friedman, Some Very Fine People, silkscreen, 14 by 18 inches



Melissa Schulenberg, Precipice, reductive silkscreen, 14 by 18 inches

# HOCKADAY MUSEUM OF ART

WWW.EXTRACTIONART.ORG/HOCKADAY

## THE LAST GLACIER

In spring of 2021, the Hockaday Museum of Art is hosting an exhibition of work from The Last Glacier Project. Photographer Ian Van Coller describes the project ([www.thelastglacier.com](http://www.thelastglacier.com)):

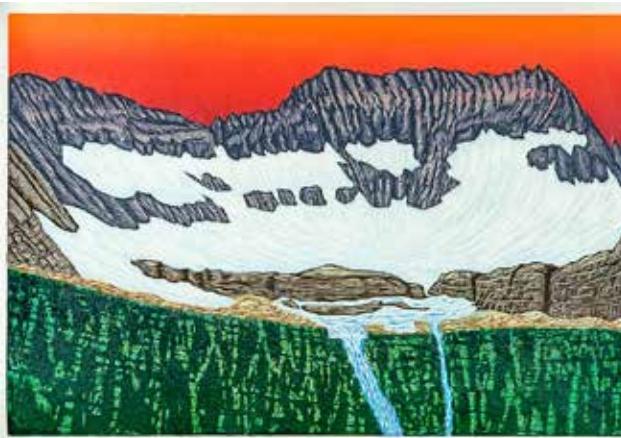
The Last Glacier is an ongoing project-based initiative that creatively documents the effects of global warming. This enterprise unites visual artists, scientists, and literary figures who create convergent research on specific wilderness environments that are experiencing tangible and dramatic ecological changes. For the last several years the project teams have focused on areas of the world affected by glacial retreat.

The Anthropocene suggests the arrival of an uncertain future. Snowpack melts and is no longer replenished; ecological collapse is imminent. We must progress our understandings of nature.

The Last Glacier books, artworks, and exhibitions share emotive-analytical visions of the twenty-first century that are real and true. Climate change is categorical, yet beauty, however temporal, still remains. As real time passes, The Last Glacier projects transform into multi-generational artifacts that share stories of mortality and resiliency in the face of a changing planet.

The Last Glacier is overseen by three visual artists: printmakers Todd Anderson and Bruce Crownover, and photographer Ian van Coller. Past, present, and future project collaborators and contributors include: Dr. Douglas Hardy and Nancy Mahoney.

An important part of the Hockaday's mission is to preserve the artistic legacy of Glacier National Park. Most of our exhibits show the park's beauty



Bruce Crownover, Thunderbird Glacier, Glacier National Park, The Last Glacier Project, reductive woodcut on Okawara paper

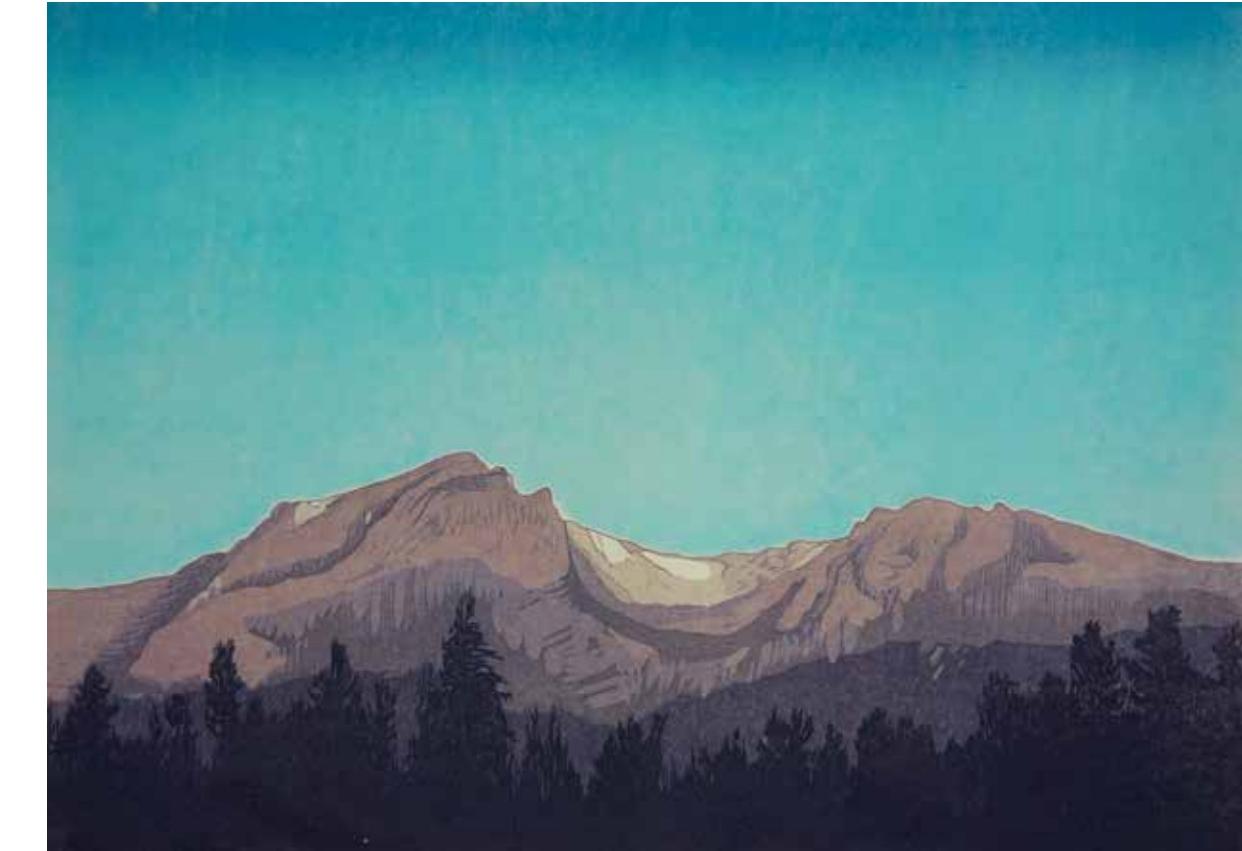
and grandeur, that complex and changing landscape made still and pleasant to hang in our living rooms. These beautiful paintings tell only part of the story.

Images from the park of disappearing glaciers—photographs that compare the appearance of the glaciers in the early twentieth century to that in the early twenty-first century—are shocking to view. Dan B. Fagre, USGS Research Ecologist at Glacier National Park, notes that “the glaciers are right on track for leaving us in a few decades.” Looking at these photographs, it is clear that much has already been lost.

The Hockaday Museum and much of northwestern Montana are dependent on Glacier National Park: it is an economic engine for our region, bringing nearly 3 million tourists to northwestern Montana each year. It is the sacred home of the Blackfeet Nation.

We are also dependent on the park and its ecosystem in ways perhaps less obvious to our visitors: it is the source of our crystalline water, our jewel-like summers, and shimmering snowy winters. Glaciers, like the clean water they produce and the ecosystems they support, cannot be replaced. The Last Glacier Project brings our attention to this critical ecosystem and the challenges it is facing, using the creative process to evaluate climate change’s visual impact on the landscape and its emotional impact on us.

—Pat Roath, Curator, September 2020



Todd Anderson, Tyndall Glacier, ROMO – The Last Glacier, 2017, Rocky Mountain National Park, Colorado, Reductive jigsaw woodcut on Okawara Washi paper, 9 runs and 10 colors, 17.25 by 24 inches



Ian Van Coller, Northern Icefield, Kilimanjaro, Tanzania, The Last Glacier Project, 2016



**SEPTEMBER 1 – OCTOBER 15, 2021**

**CUMMINGS ART CENTER**

CONNECTICUT COLLEGE, NEW LONDON, CT

[WWW.EXTRACTIONART.ORG/CUMMINGS-ART-CENTER](http://WWW.EXTRACTIONART.ORG/CUMMINGS-ART-CENTER)

## FIRE AND ICE

Barbara Zabel

An exhibition curated by Timothy McDowell and Barbara Zabel

*“Some say the world will end in fire, Some say in ice.”*

—Robert Frost

Robert Frost's poem *Fire and Ice* aptly underscores the focus of the exhibition at Connecticut College: our galleries will feature artists working in various media and on multiple fronts to address the urgency of the global climate crisis. The overriding theme of the exhibition is nature's fragility in the face of untamed capitalist growth. Given the magnitude of this global crisis, artists face a daunting dilemma: how to represent the damage unleashed by the extractive industries—oil spills, plastic pollution, global warming and rising seas, habitat loss and extinction, not to mention the unequal social impact of these disruptions.

The surge of climate activism around the world has spurred visual artists to join the ruckus. And the global reach of the artists in the show speaks to the scope of visual activism. In his *Minas* series, Bob Nugent grapples with the devastation wrought by strip mining in the Amazon River Basin. Lynda Nugent's *Honey to Ashes* addresses the destruction of habitat and indigenous cultures in Brazil caused by fires condoned by political leaders. Chris Barnard's *Deepwater Horizon* references the largest marine oil spill in history in the Gulf of Mexico; and Nadav Assor's *Ground Effect* transports us to Israel for a performative video mapping “a global border region defined by ecologically-entangled conflict and instability.” Other artists trek to the ends of the earth to gather visual material, to the Arctic, Antarctica, and other locations where the effects of global warming are most visible.

Also increasingly visible is plastic pollution, which has made its way to every corner of the world's

oceans and shores. Pamela Longobardi travels widely not in search of melting glaciers and landscapes but rather to collect objects. In works like *The Crime of Willful Neglect (for BP)*, Longobardi sources “vagrant oceanic plastic from Greece, Hawaii, Costa Rica and the Gulf of Mexico” and re-assembles the found objects in her installations “to see what it could teach us about the ocean's decline.” Longobardi models her art practice on a “Circular Economy,” upcycling discarded plastics. Working more locally, Gregory Bailey constructs works like *Rain-Collecting Water Cistern* from parts of old sculptures, repurposing them for practical purposes. These artists interrogate the capitalist cycle of purchasing, consuming, and rapidly discarding material goods. Such interventions advocate for a more responsible stewardship of natural resources. In a sense, these artist-ecologists are re-energizing the back-to-nature ethos of the late 1960s. According to Michael Harvey, “Artists were drawn to the land as an intuitive recognition of its life-giving natural beauty.” Harvey's *Rattan River* of 1967, to be recreated for the exhibition, features an earthwork made of bamboo, a material now valued for its sustainability.

All artists grapple with the question of how to communicate their ideas most effectively. Some visual activists choose abstraction, which raises the question asked by Chris Barnard: “What role does abstract painting play in the face of concrete social and ecological crises?” Though largely abstract, works by Barnard, Bob Nugent, Pamela Marks, and Rachel Abrams carry allusions to natural landscapes in crisis, which serves to intensify their cautionary message. Marks' *Safety in Numbers*, for instance, gradually draws us in to reveal its message of species loss wrought by human activity. To create her *frazil* series, Abrams uses plastics and glass, pollutants of the sea, to simulate gases trapped in glaciers, which are indicators of the health of the eco-system.

John Boone's wall of small paintings operates more conceptually. Emblazoned on each painting is a word or idiomatic phrase: PARADIGM SHIFT,



Nadav Assor, *Ground Effect*, 2016, single-channel video, 13:45 minutes

HEADS UP, SEA CHANGE, ASAP. The words “read like the brain trying to process the massive amount of information” bombarding us daily. Like Boone’s idioms, the images in Timothy McDowell’s *Daily Concerns* work synergistically: charred forests, toxic runoff, rising seas, viruses transmitted by mosquitos, the fate of migrant children, etc. The work is a litany of damages touching on the complex and disproportionate impact of these quotidian anxieties.

Other artists operate in the mold of traditional landscape painters, like nineteenth century romantics, depicting faraway sites as primeval and sublime. Christopher Volpe’s *Any Human Thing* presents an apocalyptic vision of a ship consumed by a dark foreboding sea. Borrowing his title from *Moby Dick*, Volpe executes the painting in tar “to evoke a connection between the industrial revolution, climate change, and fossil fuels.” Zaria Forman’s monumental *Arctic Ocean* is equally sublime; executed with mesmerizing exactitude, such drawings are alluringly beautiful but disquieting images of nature doomed by humans.

To enhance the impact of their work, many artists engage senses other than the visual: Nikki Lindt’s installation incorporates sound recordings of permafrost thawing; Andrea Wollensak integrates poetry into her immersive sound and video environments; Emma Hoette’s video performance *Unravelling* features the artist slowly unraveling the knitted garment encircling her neck while standing nude facing an Arctic landscape. This jarring juxtaposition of flesh and ice drives home the metaphoric link between fossil fuels and glacial melting. A sense of the vulnerability of nature is made that much more visceral by this incorporation of sound and movement. Artists bring different ways of knowing to their art, engaging all the senses with the goal of communicating the interconnectedness between living things and the natural world.

In order to access remote places like the Arctic, artists often embed themselves with scientific expeditions, which serves a dual purpose: artists find a means of transportation to their chosen sites, as well as gaining access to scientific data, to knowledge

that they transmit through their art. Zaria Forman has taken flights with NASA’s IceBridge Operation to research how scientists are mapping the Arctic to gather information about how polar regions are responding to climate change. Nikki Lindt traveled to the Toolik Field Station in northern Alaska, where she recorded the look and sound of permafrost melt; Andrea Wollensak’s residency in Iceland gave her time to access local environmental and scientific data through the Icelandic Meteorological Office; and closer to home, Wopo Holup collaborated with well-known geophysicist Klaus Jacob to calculate and depict future water levels in the East River in New York and elsewhere. Her exquisite scrolls invite viewers to consider geological time. Never has the Art/Science nexus been so relevant. Visual activists are becoming transdisciplinary, relying on scientific and other knowledge to refine their visual understanding of the Anthropocene, of human impact on the planet. A “whole systems” awareness has become a vital part of understanding and representing the implications of global change.

This “whole systems” awareness also informs artists’ commitment to working in concert with grass-roots social movements to avert climate catastrophe. While the artworks in *Fire and Ice* are alternately ravishingly beautiful, poignant, and tinged with irony and humor, the overriding emotional resonance is of anger; anger toward petrocapitalist influence, social and economic injustice, and human obtuseness. Like the global Extraction Project, the synergistic energy of the *Fire and Ice* exhibition voices a resounding call to action to help catalyze social, political, and economic change. After all, there is no “Planet B.”



Wopo Holup (1937–2017), *East River*, 2013, Japanese colored and aluminum leaf on Denril vellum, 7 by 2 feet



Top: Emma Hoette, *Unravelling # 20*, 2018, Video, 12 min 29 sec; Right: Chris Barnard, *Deepwater Horizon*, 2015, Oil on canvas, 72 by 54 inches

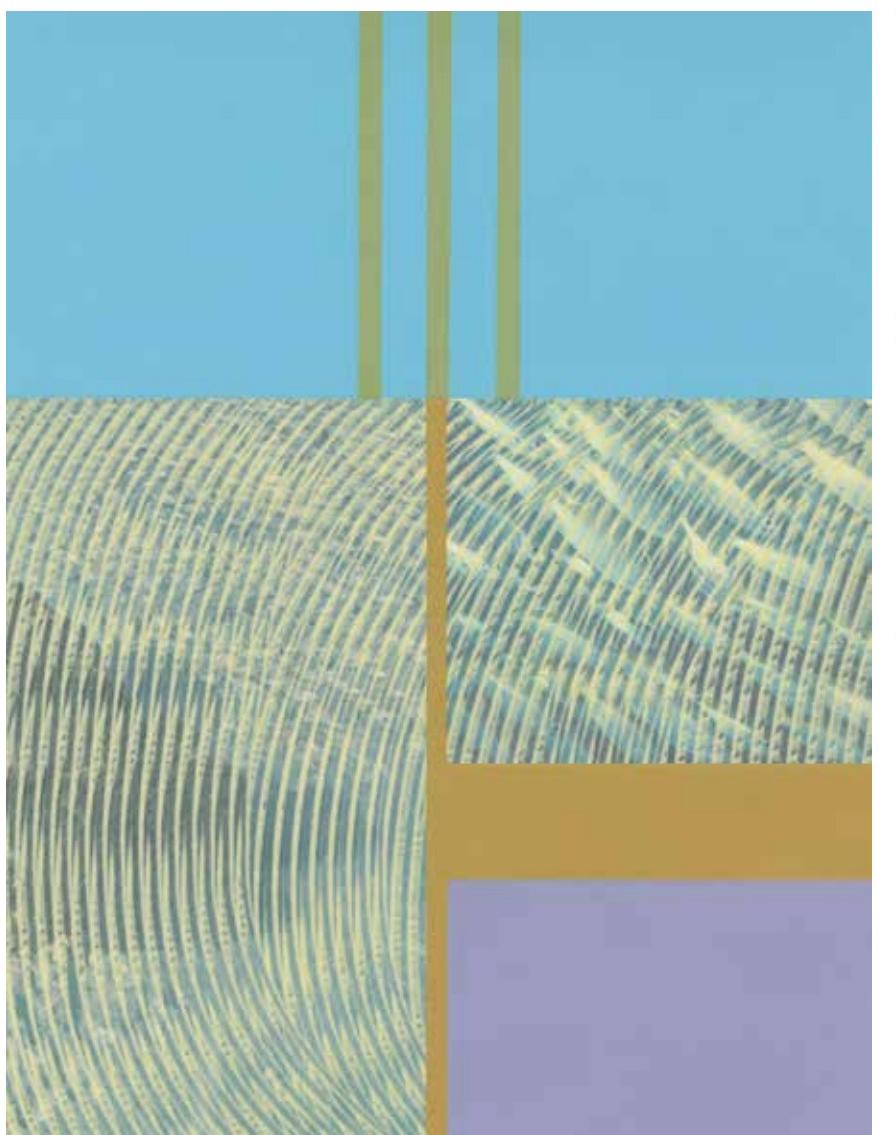


Clockwise from Top: Zaria Forman, *Arctic Ocean, (Northwest off the coast of Ellesmere Island, CAN) 83° 19' 44.976" N, 79° 18' 22.957" W*, July 17, 2017, 2018, soft pastel on paper, 40 by 60 inches; Timothy McDowell, *Daily Concerns*, 2019, oil on wood panel, 48 by 48 inches; Michael Harvey, *Rattan River*, c. 200, 16-foot lengths of bamboo

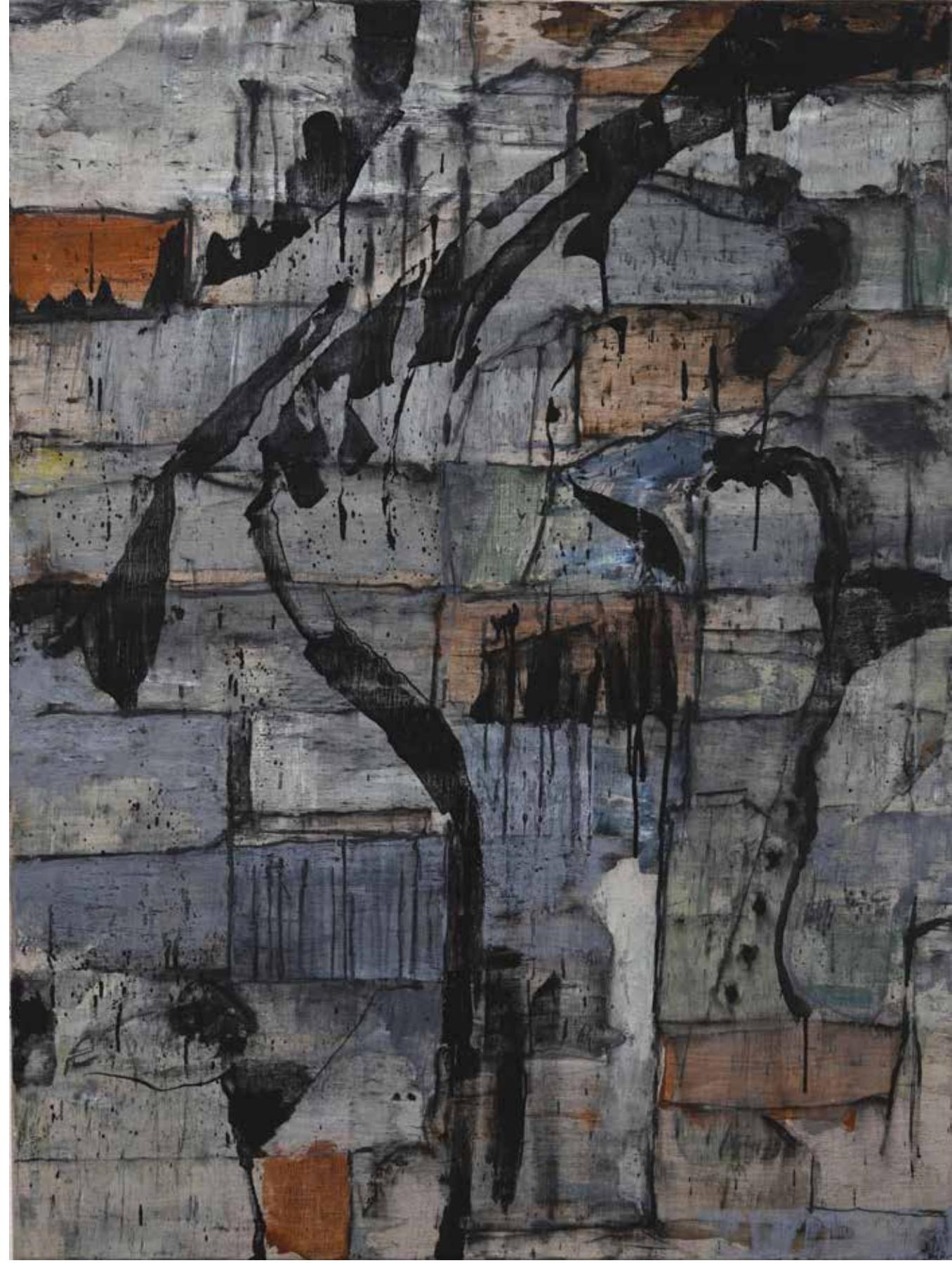


Clockwise from Top Left: Andrea Wollensak, *Open Waters (North Polar Context/Plastic Glut)*, 2015–2019, NOAA database map, 17 laser-etched glass plates and post-consumer plastic, 105 by 68 inches; Rachel B. Abrams, *Untitled (frazil XLI)*, 2019, paper on recycled matte board, 19.75 by 10.75 inches; Pamela Longobardi, *The Crime of Willful Neglect (for BP)*, 2014, 429 pieces of va- grant oceanic plastic from Greece, Hawaii, Costa Rica and the Gulf of Mexico, 84 by 138 by 6 inches

Facing page: Clockwise from Top: Christopher Volpe, *Any Human Thing*, 2017, oil and tar on canvas, 36 by 48 inches; Gregory Bailey, *Rain-Collecting Water Cistern*, 2018, reclaimed steel, cones repurposed from old sculpture, garden hose, among other recycled material, 94 by 116 by 62 inches, capacity 580 gallons; John Boone, *Paradigm Shift*, 2012, acrylic on canvas, 30 by 30 inches



Clockwise from Top: Nikki Lindt, *Permafrost Thaw Series*, *Tumbling Forests of the North*, 2019, marker and acrylic pen on paper, accompanied by soundscape, 4 sketches, each 9 by 6 inches; Lynda Nugent, *Honey to Ashes*, 2019, watercolor on yupo, 15 1/2 by 23 inches; David Dorfman, *A (Way) Out of My Body*, 2019, promotional photo by Maria Baranova from DDD (David Dorfman Dance Company) performance; Pamela Marks, *Safety in Numbers*, 2018, Acrylic on paper, 9 by 7 inches



Bob Nugent, *Mina de Ferro de Carajás*, 2019, oil, charcoal on linen, 50 by 70 inches



Maya Lin selects basalt for the Fish Cutting table at Cape Disappointment, April 29, 2005.

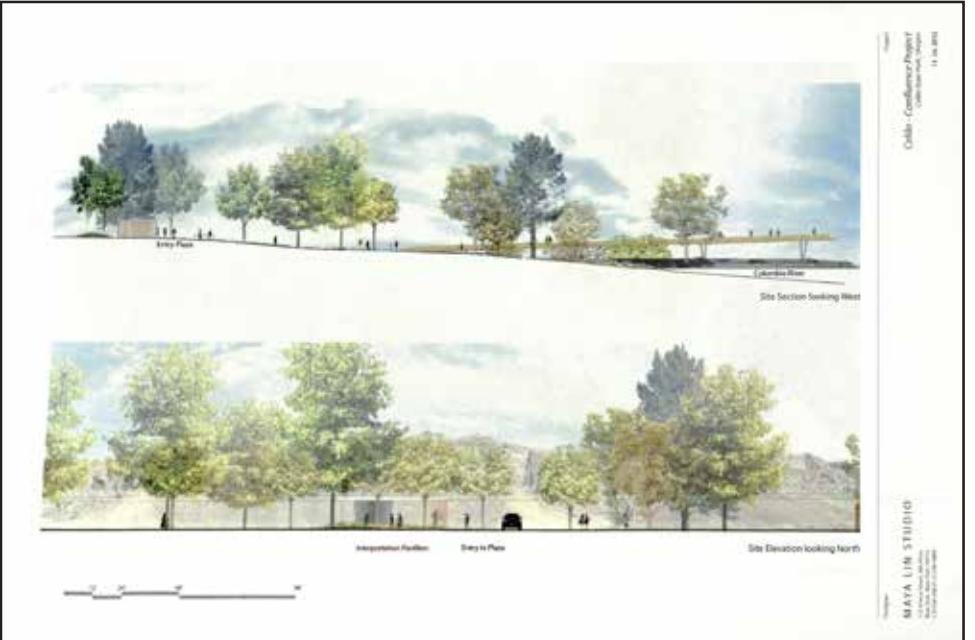
## **MAXEY MUSEUM ALONG THE COLUMBIA RIVER: MAYA LIN AND THE CONFLUENCE PROJECT**

Maxey Museum, Whitman College, Walla Walla, WA.  
April 23 – July 30, 2021

Over twenty years ago, renowned sculptor and architect Maya Lin was commissioned by a group of arts patrons and tribal leaders of the Columbia River Plateau and the Pacific Northwest to create a major work of public art in remembrance of the bicentennial of Lewis and Clark's 1804–1806 journey to the Pacific Ocean. The result is the Confluence Project, a series of six earthworks installed at important historical locations along the Columbia in Oregon and Washington. Each site carefully integrates environmental

concerns with an awareness of, and sensitivity to, the massive transformation of the landscape and its inhabitants since the Corps of Discovery expedition.

In 2018, the Confluence Project donated their archival materials to Whitman College. These include blueprints, site surveys, models and maquettes, drawings and sketches by Lin and the artists, architects and engineers with whom she collaborated. The Whitman College and Northwest Archives collection also includes documents related to an ongoing educational outreach program, "Confluence in the Classroom." Over the past two years, students in ARTH 352 Art/Environment, along with Matt Reynolds, Associate Professor of Art History and Visual Culture Studies, Penrose Library archivists Ben Murphy and Dana Bronson, and Libby Miller, Senior Adjunct Assistant Professor and Maxey Museum Director, have been planning an exhibition of this material on Whitman's campus in collaboration with



Artist rendering of Interpretation Pavilion at Celilo Falls, Oregon, Maya Lin Studio, 2012

the organizers of Extraction: Art at the Edge of the Abyss. The results, *Along the Columbia: Maya Lin and the Confluence Project*, will be on display at Whitman's Maxey Museum from April 23 to July 30, 2021.

Lin is most famous for her memorials, including the Vietnam Veteran's Memorial in Washington, D.C., and the Civil Rights Memorial at the Southern Poverty Law Center in Montgomery, Alabama. Her career is characterized by socially and environmentally conscious work, about which she says: "I create places in which to think, without trying to dictate what to think." From the Confluence Project's inception, Lin sought to present a counter-narrative of the Corps of Discovery expedition. Instead of reifying the myth of a heroic journey of intrepid explorers, Lin envisioned something radically different. At every stage, Lin has worked carefully to incorporate the broader historical context of the Columbia River into the sculptural objects installed at each location. And while the figures of Lewis and Clark are important to this history, Lin has worked diligently to place their story within an expanded timeframe that stretches back millennia and includes Native and Indigenous myths, customs, languages, and iconography. Over the last two decades, the Con-

fluence Project has become more than a series of earthworks. These sculptural art environments provide the ground for additional, ancillary efforts that include educational outreach, ecological restoration projects, and a living archive of the experiences of those who inhabit the region at a time of crisis.

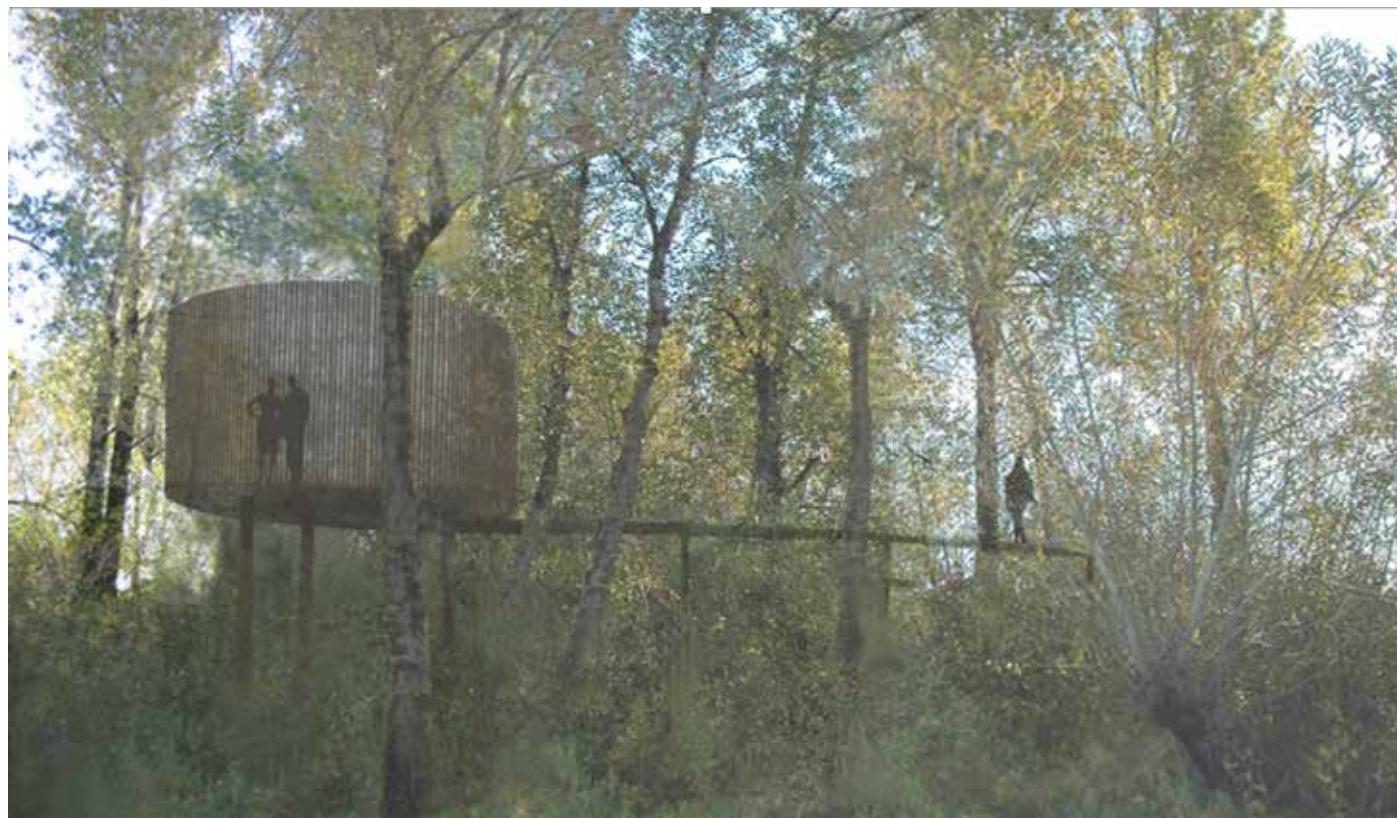
The remote, rural settings of Confluence's earthworks are also places to contemplate the extractive industries that rely

on the Columbia River's steady, managed flow of cheap water: nuclear and hydropower, agribusiness and farming, transportation, tourism and leisure, server farms and data centers (aka, "The Cloud"). In her book *Undermining: A Wild Ride Through Land Use, Politics, and Art in the Changing West*, critic Lucy Lippard writes: "Out on the margins, where local scars cover for global perpetrators, we live in a distorted mirror image of the center, which perceives our 'nature' as primarily resource. Here negative space can be more important than what's constructed from its deported materials elsewhere." *Along the Columbia: Maya Lin and the Confluence Project* will ultimately provide a unique view of the entanglements between the Indigenous peoples and cultures of the Pacific Northwest, the creative process of one of today's most important artists, and the Columbia River's ongoing development, exploitation, and sustainability.

—Matt Reynolds, Whitman College



Basalt Fish Cutting table at Cape Disappointment inscribed with Chinook creation legend, n.d.



Artist rendering of bird blind at Sandy River Delta, Oregon, Maya Lin Studio, n.d.



Maya Lin, Story circle, Sacajawea State Park, Pasco, Washington, 2015

# RECLAMATION: RECOVERING OUR RELATIONSHIP WITH PLACE

[WWW.EXTRACTIONART.ORG/COLOSTATE](http://WWW.EXTRACTIONART.ORG/COLOSTATE)

Gregory Allicar Museum of Art, Colorado State University,  
Fort Collins, Colorado, USA  
July 7 – September 19, 2021

Resource extraction created the world as we know it. Without fossil fuels, we would not have computers, airplanes, or electricity. Yet, these technologies have come at a severe cost to global ecosystems, climate stability, and human health. Some of the most complex and diverse environments—and the animal and human communities who inhabit them—have been sacrificed for the mobility and comfort of the industrialized world. Every light we turn on implicates us in this complex paradigm.

In the vernacular of extraction industries, “reclamation” signifies restoring post-extraction landscapes to a “natural” state, or even better, to an economically viable one. Lego-like terraforming processes that give way to the seeding of monocrops are par for the course. Often the work of reclaiming extraction sites falls on the shoulders of the extraction companies themselves with aid from state and federal governments. Engineers and scientists use computer modeling and the latest in agricultural science to reenvision the mine site post-extraction. Key decision makers consider future use and development. It is all very practical.

Reclamation: Recovering our Relationship with Place asks what might happen if artists, instead of mining companies, engineers, and scientists (or artists working alongside engineers and scientists) are given the reigns to envision a post-extraction world. By nature, artists are visionaries. They can challenge cultural preconceptions and even our best logic. In doing so, artists propose possibilities that at times feel far-fetched, or even ludicrous. Their work is not

subject to scientific peer-review, economics, or law. It is the disassociation from such constraints that allow artists to shed light on new ways of thinking, opening the door to hope. It is often artists that propose the clearest view forward.

The artists featured in this exhibition were chosen because their forward-thinking perspectives are both visionary and vital. They use humor, poetry, beauty, and science to present a future where the land reasserts its rights and the extraction of fossil fuels is a dark and distant memory. Do not misunderstand—this isn’t a world that disaffirms humanity. The artists featured in Reclamation are keenly aware that humans are an integral part of the great ecosystems of the earth; human rights are directly entwined with the rights of the land. The way forward implies human action.

Although processes of healing and repair are essential on a global scale, this exhibition focuses on reclamation of land currently within the political borders of the United States. Artistic voices from various regions represent diverse perspectives and localized issues. The artists in the exhibition embody the West, North, Southwest, Pacific Coast, Appalachia, and the Eastern Seaboard. Their work spans the realms of painting and drawing, performance, video, sculpture and installation.

—Erika Osborne, 2020

The artists represented in Reclamation: Recovering our Relationship with Place include:

Beth Stephens and Annie Sprinkle  
Matt Kenyon  
Cannupa Hanska Luger  
Mary Mattingly  
John Sabraw  
Cedra Wood

Curated by Erika Osborne



John Sabraw, Bat Gate Cave AMD Seep Sulfer Springs, OH, photograph courtesy of Ben Siegel



Beth Stephens and Annie Sprinkle, *Boda Negra*



Matt Kenyon, Supermajor No. 3



Cannupa Hanska Luger, The One Who Checks & The One Who Balances, Taos, NM, Photograph by Dylan McLaughlin



Mary Mattingly, Remediating El Cerrejon



Cedra Wood, Plot Kluane



John Sabraw, Chroma S3 1



# IAIA MUSEUM OF CONTEMPORARY NATIVE ARTS (MoCNA)

WWW.EXTRACTIONART.ORG/MOCNA

## EXPOSURE: NATIVE ART AND POLITICAL ECOLOGY

Anne and Loren Kieve Gallery

August 13, 2021–January 23, 2022

Exposure: Native Art and Political Ecology is a major traveling exhibition that documents international Indigenous artists' responses to the impacts of nuclear testing, nuclear accidents, and uranium mining. The exhibition and its accompanying scholarly catalog give Indigenous artists a voice to address the effects of these man-made disasters on Native communities around the world. The first international exhibition of its kind, Exposure was organized during the 75th year anniversary of the first nuclear bomb test explosion in New Mexico as well as the bombings of the Japanese cities of Hiroshima and Nagasaki in 1945. Even though there have been important exhibitions related to this subject, these shows mainly focused on specific nuclear tragedies in their own countries, including Burrinja Cultural Centre's Black Mist Burnt Country (Australian touring exhibition 2016–2019); Hope + Trauma in A Poisoned Land organized by the Flagstaff Arts Council (August 15–October 28, 2017); Hiroshima-Nagasaki Atomic Bomb exhibitions organized by the Hiroshima Peace Memorial Museum and Atomic Bomb Heritage Section, Nagasaki City Hall; Atomic Histories: Remembering New Mexico's Nuclear Past (New Mexico History Museum, June 3, 2018–January 19, 2020), and Don't Follow the Wind, an exhibition initiated and organized by the Japanese artist collective Chim↑Pom in response to the Fukushima Daiichi Nuclear Power Plant disaster (2015 – present).

The main goal of the traveling exhibition and publication is to provide a platform for internation-

al Indigenous artists to address the long-term effects of nuclear testing, nuclear accidents, and uranium extraction on Indigenous communities and the environment, both in New Mexico and around the world. Much of the atomic testing and related disasters happened many decades ago, with little public knowledge and even less of an understanding of the effects. For this reason, another goal of the exhibition is to create greater awareness of the potentially deadly consequences of nuclear exposure. This includes shedding light on the fact that radioisotopes from nuclear test explosions end up in every living human being's body.<sup>1</sup> Many of these disasters are either forgotten, overshadowed by other environmental catastrophes, or covered up by the companies or governments responsible for them.

Although the United States component of this exhibition focuses primarily on Native American artists from the Southwest, the problem of uranium extraction in Indian Country is widespread: the Environmental Protection Agency (EPA) has identified 15,000 abandoned uranium mine locations with uranium occurrence in fourteen Western states. About 75% of those locations are on federal and tribal lands.<sup>2</sup> There are over 1,000 uranium mines and mills on the Navajo Nation, and over 500 abandoned uranium mines on Navajo and Pueblo lands in New Mexico alone. Before 1962, Native American miners worked in the mines without any protective equipment and lived in houses constructed from contaminated material. Many of them and their family members have died as a result of uranium related illnesses. Generations later, family members continue to suffer from cancer and birth defects resulting from uranium contamination. New Mexico also became notorious for the development of the first nuclear weapons in Los Alamos and the first atomic bomb test, in Trinity, which ultimately led to the first nuclear bomb detonations in Hiroshima and Nagasaki, Japan in 1945.

Nuclear colonialism is an international problem; Australia is the second largest uranium producing



Anna Tsouhlarakis (Diné/Creek/Greek), *Breath of Wind*, 2017, film, running time: 3:18

country in the world. The country's atomic history began in the 1950s with twelve major British atomic bomb tests. From 1953 to 1963, there were also more than 100 "minor" test explosions on the Montebello Islands, in Emu Field, and in Maralinga. The contamination from the tests and uranium mines have poisoned Aboriginal people and the land: those who were exposed suffered from miscarriages, disfigurement of children, cancer, lung disease, kidney damage, or death. In 1953, uranium was discovered near the Serpent River First Nations Reserve, Canada, in the heart of a sacred mountain. The waste materials of uranium mining have forever poisoned the Serpent River and its watershed. The French nuclear bomb testing in French Polynesia along with the American atmospheric testing 900 miles from Hawaii and in Micronesia had severe consequences for Tahitians (m'-ohi), Marshallese (majol), and other Pacific Islanders. Such consequences included forced migration and subsequent discrimination against immigrant Micronesians in Hawaii, not to mention health issues from radiation exposure and gaps in medical care for Pacific Islanders. On Au-

gust 6 and 9, 1945, the United States detonated two nuclear bombs over the Japanese cities of Hiroshima and Nagasaki. Over 210,000 people died due to the atomic bombings—most of them were civilians. Finally, because Greenland's ice is melting rapidly, uranium deposits are more accessible than ever before. In 2013, Greenland's parliament ended the zero-tolerance policy for uranium mining. 88% of the population are Inuit, and many of them rely on fishing, hunting or farming for their livelihood, which could be jeopardized by toxic and radioactive waste from the proposed Kvanefjeld mine. These are just a few examples of how nuclear exposure affects Indigenous communities worldwide.

The Exposure exhibition examines the creative responses of international Indigenous artists to these deadly legacies. Among the artists are Carl Beam (Ojibway), De Haven Solimon Chaffins (Laguna/Zuni Pueblos), Miriquita "Micki" Davis (Chamoru), Bonnie Devine (Anishinaabe/Ojibwa), Joy Enomoto (kanaka maoli/Caddo), Solomon Enos (kanaka maloli), Kohei Fujito (Ainu), Kathy Jetñil-Kijiner (Marshallese-Majol), Alexander Lee (Hakka, Tahi-



Mallory Quetawki (Zuni Pueblo), *DNA Damage*, 2017, acrylic on watercolor paper, 16 by 20 inches, Collection of University of New Mexico



Mallory Quetawki (Zuni Pueblo), *DNA Repair*, 2017, acrylic on watercolor paper, 16 by 20 inches, Collection of University of New Mexico

ti), Dan Taulapapa McMullin (Samoan), David Neel (Kwagu'l), No'u Revilla (kanaka maoli/maoli-Tahitian), Mallory Quetawki (Zuni Pueblo), Chantal Spitz (maohi), Adrian Stimson (Blackfoot), Anna Tsouhlarakis (Diné/Creek/Greek), Munro Te Whata (Maori/Ninuean), Will Wilson (Diné), as well as other Indigenous artists from Australia, Canada, Greenland, Japan, the Pacific Islands, and the U.S.

These artists make significant contributions to the contemporary art world with their innovative practices and thought-provoking content. Many of

them utilize local or tribal knowledge while integrating a mixture of Indigenous and contemporary art forms as visual strategies. Several of the artworks explore the contrast between Indigenous cultures' and mainstream Western culture's very different relationships to uranium and nature. These works are a reminder of the fatal compliance of the colonial mindset. The artists' creative responses to nuclear disasters along with the detailed analyses by the catalog authors represent attempts to understand the causes and effects of these deadly tragedies. However, for many artists these artworks also reveal a deeper expression of their Indigenous identity in connection with the suffering, pollution and destruction caused by nuclear exposure.

*Exposure: Native Art and Political Ecology* was co-curated by iBiennale Director Dr. Kōan Jeff Baysa (Ibanag); Hokkaido Museum of Modern Art Chief Curator and Vice Director Satomi Igarashi; Greenland National Museum curator Kirstine Eiby Möller (Inuit); independent curator Tania Willard (Secwepemc, Canada); Art Gallery of New South Wales Assistant Curator of Aboriginal and Torres Strait Islander Art Erin Vink (Ngiyampaa), and MoCNA chief curator Dr. Manuela Well-Off-Man. The development of this exhibition was shaped through conversations, studio visits and roundtable discussions with Indigenous artists, museum professionals, and health and environmental experts. The exhibition, public programs and catalog will serve as a platform for ongoing dialogues between artists, curators, scholars, and activists on these issues. MoCNA is known in the field for promoting contemporary Native art that addresses environmental and political issues. *Exposure: Native Art and Political Ecology* is supported by generous grants from the Ford Foundation and the Andy Warhol Foundation for the Visual Arts.

Among the Native American artists in the U.S. section of the exhibition are Mallory Quetawki (Zuni Pueblo), Anna Tsouhlarakis (Diné/Creek/Greek), and Will Wilson (Diné). Zuni artist and biologist



Will Wilson (Diné), *Autoimmune Response #5*, ca. 2005, archival pigment print, 44 by 110 inches, MoCNA collection

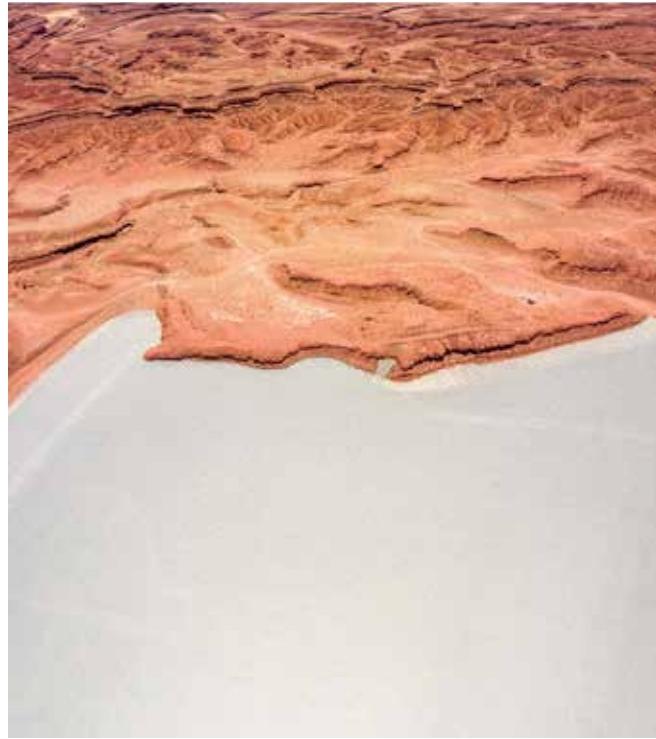
Mallory Quetawki creates paintings to help members from New Mexico's Native American communities affected by uranium exposure to discuss their illnesses. Some Native cultural traditions and religious beliefs prevent patients from openly discussing these uranium related health concerns. In her paintings, *DNA Damage* and *DNA Repair*, Quetawki uses traditional Native designs and art forms to help patients visualize how proteins deteriorate when in contact with heavy metals such as uranium. According to Quetawki, "DNA damage can occur naturally or by environmental factors such as chemical carcinogens, reactive oxygen species, radiation, and certain atmospheric pollutants." In her artist statement for *DNA Damage* she explains, "In this painting each type of factor is a literal 'wrecking-ball' causing damage to a strand of DNA. The painted designs are taken from Pendleton blankets that are used both in gift giving, trade, and ceremony. These designs are from a collection of tribes throughout the southwest and beyond, so it is used in this painting to signify how we are all connected."

The painting *DNA Repair* also creates awareness about how certain customary Southwestern Native American foods, such as blue corn, assist in healing the damaged DNA proteins, symbolized by turquoise beads, since they contain zinc. The artist explains, "DNA has the ability to repair itself through complex mechanisms and pathways when damage occurs. Its intricacy of repair can be compared to the

creation of beaded items in Native Culture. Designs are thought out ahead of time and require skill and patience to be able to bead such intricate pieces. When a beaded necklace comes undone, the stones/beads are restrung by using what is already there. The design used is from the Crow Nation. The use of the flower design symbolizes the idea of regrowth."

Anna Tsouhlarakis' film *Breath of Wind* explores the long-term effects of uranium exposure near Church Rock, New Mexico. She explains in her artist statement, "While not much visible evidence is left of the Church Rock uranium disaster, the catastrophe resurfaces every time the wind blows and sends radioactive particles to the homes and corrals of local residents." The 1979 explosion of a dam near Church Rock, New Mexico sent uranium mining waste through the water system which had devastating consequences for the local population. The cancer rates are the highest where radioactive dust is blown in the wind.<sup>3</sup>

Diné photographer Will Wilson draws inspiration from the many years he spent living on the Navajo Reservation as a child. The Navajo Nation has one of the world largest deposits of uranium ore, which has been mined by outside companies since the 1940s. Wilson's reflections on uranium mining, the resulting pollution of nature and death of Native American miners and their families were part of his *Auto Immune Response* series (2005–2019). Featuring himself as a fictional post-apocalyptic narrator, these



Will Wilson (Diné), Mexican Hat Disposal Cell, Navajo Nation (detail of triptych from the Connecting the Dots series), 2019, drone-based digital photograph. Collection of the artist.

large panoramic photomontages of Navajo landscapes are both incredibly scenic and dangerously poisonous. *Connecting the Dots*, his new body of work, is a further development of his *Auto Immune Response* (*AiR*) series. The photographs are drone-based aerial views of uranium pollution and abandoned uranium mines on or near Navajo Nation. The photographs are presented as panoramic triptychs, accompanied by app-activated portrait photography that allows “Diné people to re-story their narrative,” according to Wilson. The *Connecting the Dots* series combines traditional photography processes, historically used to document Indigenous people, with augmented reality technology to create portraits that spring to life via a video overlay through Wilson’s Talking Tin-type app. As part of this project Wilson “re-storied” a map of the Navajo Nation that marks the location of 521 abandoned uranium mines. He connects the dots with a photographic survey that includes data, portraiture, and multi-vocal testimony.

Among the disaster areas documented by Wilson are Mexican Hat uranium disposal cell, Church

Rock uranium mill spill, Babbit Ranch uranium upgrader, and White Mesa uranium mill. Through engaged practices such as *AiR* and the *Connecting the Dots* series, Wilson uses photography to present the unsettling evidence of ecological colonization and social poverty. Historically, photography has been used as a tool for racial, social, political, and economic colonization of Native North America. Wilson turns the tables and uses his photography as political intervention and to reclaim a sense of agency. His works can be interpreted as strategies for environmental remediation on Navajo Nation and “platforms for voices of resilience, wisdom, and vision for a transition to restorative systems of economy and memory making.”

Wilson’s hope is that these projects “will serve as a pollinator, creating formats for exchange and production that question and challenge the social, cultural, and environmental systems that surround us.” He explains, “Re-telling stories of the land by those most impacted by the false logic of extraction will enact what the Climate Justice Alliance has referred to as a ‘Just Transition’... practices that build economic and political power to shift from an extractive economy to a regenerative economy.”<sup>4</sup>

—Manuela Well-Off-Man, PhD  
Chief Curator, MoCNA

#### NOTES:

1. Dr. Ross Farnell, “Introduction,” in *Black Mist Burnt Country: Testing the Bomb. Maralinga and Australian Art*, edited by Jan Dirk Mitmann (Upway, VIC: Burrinja Dandenog Ranges Cultural Centre, 2016).
2. “About Abandoned Mines”, United States Environmental Protection Agency, accessed August 23, 2020.
3. Traci Brynne Voyles, *Wastelanding: Legacies of Uranium Mining in Navajo Country* (Minneapolis: University of Minnesota Press, 2015), 4–6; 139–140.
4. Will Wilson in an email to the author, August 28, 2020.



Yhonne Scarce (Kokatha/Nukunu), Glass Bomb (Blue Danube), 2015, 8.66 by 25.20 by 8.66 in, National Gallery of Australia. Image courtesy of the artist and THIS IS NO FANTASY, Melbourne.

## THE GREAT AUSTRALIAN SILENCE

Erin Vink

In 1968 W.E.H. Stanner coined the term, ‘the Great Australian Silence’, referencing the conscious ‘forgetting’ of Aboriginal people by Australia’s history.<sup>1</sup> The term bore witness to the dark, secretive events of dispossession and the atrocious acts of colonial violence that had slipped from view. And so it has been since the 1950s in parts of the Southern, Central, and Western Desert regions of Australia, when Australia’s mother, the United Kingdom of Britain and Northern Ireland, strove to join the nuclear arms “club.”

Australia’s history of nuclear colonialism began in 1952 when the British military exploded three large-scale nuclear weapons along the Montebello Islands archipelago as part of Operations Hurri-

cane (1952) and Mosaic (1956). Then, in the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands, a desert country of South Australia, at a seemingly uninhabited place called Emu Field, they exploded two additional weapons under Operation Totem (1953). At Maralinga, perhaps the most well-known location of Australia’s atomic weapons sites, the British detonated seven major bombs as part of Operations Buffalo (1956) and Antler (1957). From a First Nations perspective the story of Great Britain’s atomic weapons testing program is the violent dislocation of the Pitjantjatjara, Yankunytjatjara, Kokatha, and Nukunu people from their lands.

Because the British atomic weapons testing program was so secretive and deadly, it remains at the heart of discussions around Australia’s nuclear problems. As a nation we are extremely fortunate that in the past decade, the few remaining Anangu who experienced these tests first-hand have begun



Betty Muffler (Pitjantjatjara), *Ngangkari Ngura (Healing Country)*, 2017, Acrylic on linen, framed: 167.8 cm by 244.5 cm by 5.2 cm, 66.06 by 96.26 by 2.05 inches

making art about their experiences. One prolific artist still living is Betty Muffler (b. 1944), a senior Pitjantjatjara artist, a strong kungka (woman), and *ngangkari* (traditional healer), who currently works out of Iwantja Arts. Muffler brought particular attention to these atrocities in 2017 when she won the Telstra National Aboriginal and Torres Strait Islander Art Award for her painting *Ngangkari Ngura (Healing Country)*. This complex painting depicts places of healing in her Country following the devastation caused by testing and juxtaposes notions of anxiety and the unknown against the therapeutic.<sup>2</sup>

Another prominent artistic voice speaking out about the negative consequences of nuclear weapons testing program on the Indigenous people of Australia is contemporary glass artist and Kokatha/Nukunu woman Yhannie Scarce (b. 1973), who since 2015 has produced a number of works that bring attention to the program's legacy. Her major works include the series *Blue Danube* (2015), *Thunder Raining Poison* (2015), and *Death Zephyr* (2017). The most recent of these, *Death Zephyr*, is an ambitious work comprising over 2,000 small hand-blown glass yams, delicately suspended in a cloud-like formation that recalls the black rain or *puyu* that fell on people, causing immediate sickness and early

deaths. In manufacturing the glass, Scarce mimics the extreme heat created at the bomb sites during explosions, where the desert sand was irradiated and crystallised.<sup>3</sup> If you visit Maralinga, the ground still crunches underfoot.

Unfortunately, Australia's nuclear problem did not end with the final weapons test; today it is the second largest uranium producing country in the world. In the late 1970s, uranium was first mined in Australia's North region on Mirarr Country. At this time it was common for Aboriginal and Torres Strait Islander peoples' native

title rights to be extinguished in favour of pastoral and mining companies, and while the Mirarr very clearly opposed the development of a mine at site called Ranger, mining still went ahead in a World Heritage Area.

Australia has yet to fully engage with and accept the events that are a direct result of its nuclear colonisation, so it is extremely fortunate that our First Nations artists and activists are offering valuable discourse and visual insights into Australia's concealed history of nuclear violence and mining. Let us hope that they continue to encourage dialogue for Australians to engage in and learn lessons about how we treat Traditional Lands and our Indigenous peoples.

#### NOTES:

1. W.E.H. Stanner, *After the dreaming: black and white Australians – an anthropologist's view*, Australian Broadcasting Commission, Sydney, 1969.

2. Erin Vink, 'Betty Muffler', *Art Collector*, issue 90, Oct-Dec 2019.

3. Daniel Browning, 'Artist Text' on Yhannie Scarce for 'The National: New Australian Art' 2017.

## STONES, SPIRITS AND THE UNMASKING OF THE COLONIAL IN NUCLEAR NARRATIVES

Tania Willard

I am not sure I can imagine what my ancestors would have thought of nuclear energy or the nuclear bomb. Even today, I am not sure that I can fully conceptualize their awesome power and destructive capabilities. Maybe none of us can. Still, artists and their work can help us do more than just conceptualize the incomprehensible—they remind us that nuclear time extends far beyond our time, affecting entire

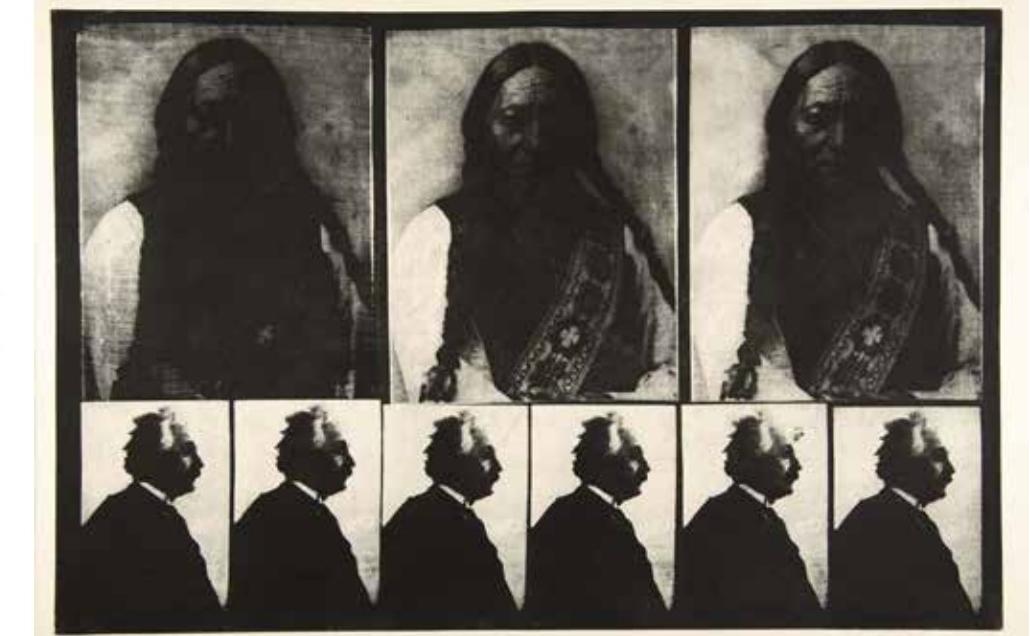
generations of our future ancestors. Perhaps we really can feel "earth-time" in our bones; perhaps it leaves a permanent imprint on our lives in the same way that radiation stains everything it touches. What then remains of the signature of spirit? In *Exposure: Native Art and Political Ecology*, Indigenous artists Carl Beam, David Neel, Bonnie Devine and Adrian Stimson bring this "marrow memory" into the forefront: a warning in our blood, a sickness

that makes your hair fall out, a process of healing that requires earth-time to bear fruit.

Canadian curator John O'Brian has conceptualized the atomic bomb within the lexicon of photography and art through exhibitions like *Camera Atomica* (2015), at the Art Gallery of Ontario and *BOMBHEAD* at Vancouver Art Gallery (2018). In his catalogue essay for *BOMBHEAD*, O'Brian says, "Art tells us about nuclear threat by making it visible

through representation," in contrast to the invisibility of radiation.<sup>1</sup> Indigenous art makes visible the untold stories of Indigenous peoples and lands and the damage they endure from nuclear testing and mining, as well as the spirit of the sickness that Indigenous people saw long before the splitting of the atom.

The late Carl Beam, an Anishnaabe printmaker, featured famous physicist and forefather of the atomic bomb Albert Einstein several times over his career. One striking image, *Sitting Bull and Einstein* (ca. 1990), features a juxtaposition of photographic images of Einstein and Sitting Bull. While Western audiences might normally place the German physicist in pride



Carl Beam (Ojibway), *Sitting Bull and Einstein (The Columbus Suite)*, ca. 1990, etching in black ink on paper, 31.5 by 48 inches (35 x 51 inches framed), Collection of Carleton University Art Gallery, Ottawa, Ontario: Purchase 2003, photo by Patrick Lacasse

of place at the top of the image frame, instead they are treated to an inversion of the established Western order. The viewer is asked instead to value Indigenous ways of knowing which warn against the disconnected rationalism that Western science represents. Here, spirit is stronger, and in this image we are not vanishing. Sitting Bull assumes a 'visual sovereignty' that destabilizes our common attributions of the coming of the Atomic Age.<sup>2</sup>



Adrian Stimson (Blackfoot), *Fuse 3*, 2010, oil and graphite on canvas, 60 by 84 inches (62 by 86 inches framed), Collection of the Alberta Foundation for the Arts, 2016.028.004

In Adrian Stimson's work *Fuse 3* (2010), the artist restores the buffalo to the plains, with a distant mushroom cloud from a nuclear explosion in the background. This work represents a hierarchy of image which places Indigenous rights, histories, and knowledges ahead of atomic representation. Lyn Bell, in an essay about this body of work, states, "Stimson crumples and folds time, bringing the past of the buffalo holocaust and the present moment of nuclear time together in the space of the gallery. In these atomic visions, the past keeps returning as the future, invoking the hidden history of "radioactive colonialism:" a history of nuclear tests, uranium mining and nuclear waste disposal on Indigenous lands across North America, including Northern Saskatchewan."<sup>3</sup> In this body of work, Stimson examines the history of uranium mining in Canada within Indigenous lands and territories and equates the impacts of uranium extraction with the destruction of the Buffalo. As a representation of colonialism, this is yet another invisible sickness infecting the land. The trauma represented by the mushroom cloud is on equal footing with the trauma we observe in archival images of inconceivable mountains of Buffalo bones from the mid 1800s that signaled the progress of settler colonialism. Those archival photographs of piles of buffalo bones are mushroom clouds.<sup>4</sup>



Bonnie Devine (Anishnaabe/Ojibwa), *Phenomenology*, 2015, chunk of gneiss, 92 hardwood stakes draped in muslin, and sample of uranium, Collection of the artist, Toronto, CA

In Anishnaabe artist Bonnie Devine's installation *Phenomenology* (2015) a simple stone accompanies ghostly figural muslin sheets. This stone is a uranium rock from Serpent River, Ontario, part of the artist's home territories. In 1953 uranium was found in a mountain sacred to Anishnaabe people near the Serpent River First Nations Reserve, and the subsequent mining led to a poisoning of the entire Serpent River watershed. Another mountain of bones, an extinction of spirit that ushered in the death culture of colonization. The emittance—the radioactive signature of this stone—sits silent and loaded in the center of Devine's installation. It holds story; it holds the weight and spirit of the stories of the lands and waterways poisoned. The figural muslin sculptures that accompany the stone read both as specters—specters of colonial history—and as flags of peace and of surrender simultaneously. They are a surrendering to the power of the land, a commitment to respect the power of this stone.

This animate universe of Indigeneity, wherein a uranium stone demands respect, is also a universe where the intangible (in contrast to what is measurable in Western thought) serves as an important carrier of knowledge, whether in song, in art, in music or in dance. Through these artforms, these knowledges can be released and/or revealed. In this way a mask is not only a disguise but a becoming. In David Neel's *Chernobyl Mask (Allusion to Bakwas)*

(1993), a Northwest Coast style cedar mask is painted with large nuclear power plant cones in the center of its forehead. Referring to the proliferation of nuclear energy and to the recent memories of nuclear disasters like Chernobyl, Three Mile Island, and Fukushima, Neel's mask can be thought of as animate, as a being in itself. In Neel's artist statement he explains, "In 1988, when I began creating masks about contemporary events and issues my work was controversial. [...] I believe that it is the role of a Native artist to create work that is both contemporary as well as traditional art. This is based on my early research and having seen the pieces that were made by the old masters. I based this mask on the *Bukwus*, or Wild Man of the Woods, which is a character from Kwakwaka'wakw culture. He is the Chief of the Ghosts and he tricks people into eating his food, which may be disguised as a delicious salmon but is in fact grubs or rotten wood. Afterwards, his victims are trapped in the land of the ghosts."<sup>5</sup> Is this where we find ourselves today in the post nuclear age, a land of ghosts?

The mushroom cloud is not only a visual symbol of the atomic bomb. It is a reinforcement of Indigenous prophecy, and an oral and mnemonic archive of both the destruction of the past and the awareness that the same power that created the bomb rests in the land and water still today. We need to return to a culture of respect. We need a resurgent power to heal these scars, these piles of bones, this ongoing genocide of spirit. A stone, a surrender, an inversion, a conversion, a mask. All of these may yet help us feel the incomprehensibility of our crimes. If we let these spirits speak what will they tell us?



David Neel (Kwakwaka'wakw, Canada, British Columbia), *Chernobyl Mask (Allusion to Bakwas)*, 1993, cedar wood, cedar bark, acrylic paint, 28 by 14 by 8 in, Margaret E. Fuller Purchase Fund, 97.55, Seattle Art Museum

#### NOTES:

1. BOMBHEAD, exhibition catalogue Vancouver Art Gallery, 2018.
2. Rickard, Jolene. "Diversifying Sovereignty and the Reception of Indigenous Art." *Art Journal*, vol. 76, no. 2, 2017, pp. 81–84.
3. Lynn Bell, *Adrian Stimson: Redemption* exhibition catalogue, Mendel Art Gallery, Saskatoon SK, 2010.
4. LH-2823 Pile of buffalo bones. – 1890. Classification: BUFBALO. Location: Exhibition Collection / Negative Collection / Slide Collection / Subject Collection. Courtesy Saskatoon Public Library – Local History Room.
5. David Neel artist statement from personal correspondence with the artist, Aug. 31, 2020.

## AINU ART: OKI KANO AND KOHEI FUJITO

Satomi Igarashi

MARCH 2011. Invisible demons spread to Japan. They had no sound, no color, no odor, riding on the wind, flying in all directions, over the Pacific Ocean, seeping into the earth and flowing into the sea.

On March 11, a nuclear power plant in Fukushima suffered a major accident due to the earthquake and tsunami that hit Eastern Japan. The radioactive substance, cesium-137, released into the atmosphere from there was said to be 15,000 terabecquerel. This is equivalent to the radiation of 168.5 Hiroshima atomic bombs. Along with Chernobyl, the Fukushima disaster was the worst nuclear accident in history.

Hiroshima, where uranium was dropped in 1945; Nagasaki, where plutonium was used; and Fukushima, where the nuclear accident occurred in 2011—these are all Japanese cities that have suffered enormous damage from nuclear pollution. The memories of Hiroshima and Nagasaki are conveyed in sculptures, paintings, literature, movies, etc. Fukushima has also become an important theme for artists living in Japan. For example, some artists visualize invisible radioactivity or describe it as a problem that they must face. One such artist is the musician and producer, Oki Kano, who plays the Tonkori, a traditional Ainu instrument.

Oki said in May 2011 at the (UN) Permanent Forum on Indigenous Issues in New York, “Uncontrollable radioactivity is like a vicious god.” He suggested that the indigenous people should work together to push forward the abolition of nuclear weapons. It was a statement on behalf of the Ainu. In addition, he produced the song *You can't see it, and you can't smell it either* under the name of Rankin Taxi & DUB AINU BAND, and widely spread the message of denuclearization.

Hokkaido artist Kohei Fujito foregoes the more traditional tools of wood and knife and instead cuts patterns into iron plates using a laser cutter, or creates forms using a 3D printer. Kohei is not particular about tradition when choosing materials and methods. “I don’t think past Ainu craftsmen would have hesitated to adopt new materials, tools, and methods,” he says.

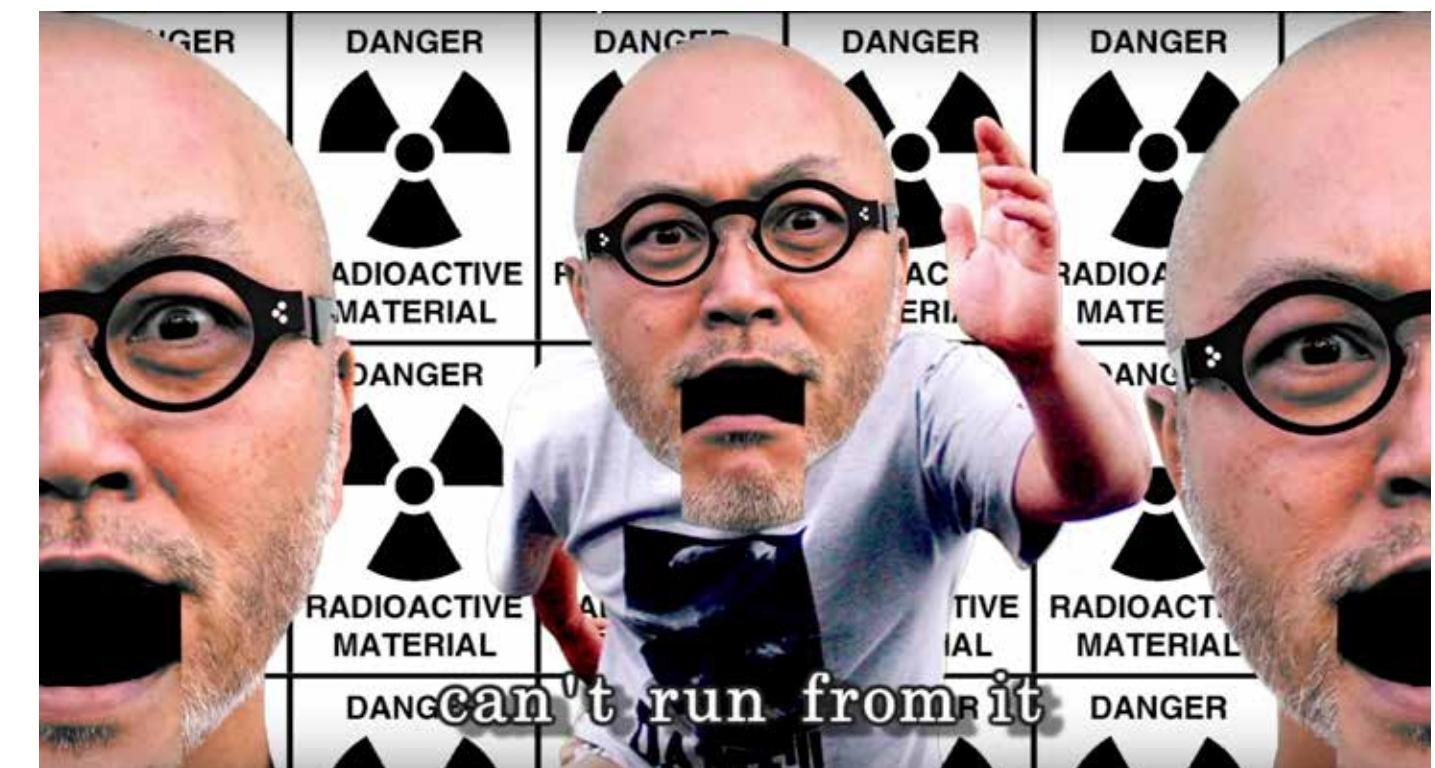
A spiral pattern with protruding thorns. In traditional Ainu costumes, these patterns are repeated to decorate the collar, sleeves, and hem. Just as a thorn plant protects itself with sharp needles, a thorny Ainu pattern prevents evil spirits from creeping up on people.

Kohei designed a guardian pattern and created an installation using iron plates. The starting point of the image was his inability to protect his family from invisible demons after the Fukushima nuclear accident occurred. The wind is one of the gods of the “Rera-kamuy”, the Ainu language, but in the aftermath of Fukushima, the wind god carried invisible radiation. It was his first experience of fearing the wind. In Kohei’s sculpture, one side of the iron plate has been left unprotected and has started to corrode due to invisible oxidation processes, a metaphor for nuclear radiation. It is as if the wind of radioactivity is blowing.

What appeared at first to be a safe temple that could produce clean energy forever, instead turned out to be populated by evil gods who spit out deadly poison.



Kohei Fujito, maquette for *The Singing of the Needle*, 2020, iron, acrylic, and deer skull, height 2.1 m; outer diameter 2.7 m, weight 314–350 kg, photo courtesy of the artist.



Rankin Taxi, *You Can't See It, and You Can't Smell It Either*, lyrics: Rankin Taxi, video: Takahiro Morita FESN, music: Dub Ainu Band, producer: Oki Kano



## CEDING THE MUSHROOM CLOUD

Kōan Jeff Baysa, M.D.

"My island is contaminated. I have three tumors in me, and I'm frightened. I don't know whether I should have children or not, because I don't know if I will have a child that is like a jellyfish baby. All I know is that I must travel the world and share our story of the bombs, so that we can stop them—before they get you."

—Darlene Keju, (1951–1996)

Marshallese activist and educator

HAWAIIAN ISLANDS. At 0807 on 13 January 2018, an alert was issued of an incoming ballistic missile threat. Recent saber rattling of nuclear threats from North Korea put Hawai'i squarely within striking distance.

It was ultimately a false alarm but nonetheless Pacific Islanders, especially the older Marshallese who number among the roughly 15,000 individuals forced to migrate to the Aloha State, cringed as the specters of radiation sickness, malformed babies, and cancers

from downplayed radiation exposure loomed in their memories, and fears were kindled anew.

From 1946 to 1958, the U.S. conducted 67 nuclear tests within the Marshall Islands with devastating human and environmental consequences, reverberating today. Runit Dome, on Enewetak Atoll in these islands, is a repository of more than 3.1 million cubic feet of U.S. produced radioactive soil. Cracks have appeared in the collapsing concrete shell and rising seas due to climate change are about to lap at its margins.

From 1960 to 1996, France carried out 193 nuclear tests in French Polynesia. The French government denied responsibility and the extent of plutonium fallout was kept hidden. Radioactive material was dispersed and detected in the Cook Islands, New Zealand, Niue, Fiji, Tokelau, Samoa, Tonga, Tuvalu, and Guam.

Born and raised in Hawai'i, I worked as a curator with native artists Kathy Jetñil Kijiner (Marshallese Islander), Alexander Lee (Hakka, French Polynesia), and Miriquita Davis (Chamorru, Guam) in Honolulu Biennial 2017; with Solomon Enos (kanaka maoli,

Hawai'i) in Honolulu Biennial 2019; and with Dan Taulapapa McMullin (Samoa) in iBiennale 2019.

Firebrand Kathy Jetñil Kijiner is a poet, performance artist, educator, and climate change activist from the Marshall Islands. She collaborated with director Daniel Lin on the film ANOINTED (2017), exploring the nuclear testing legacy of the Marshall Islands through the legends and stories of Runit Island.

Solomon Enos (kanaka maoli) collaborated with Jetñil Kijiner and the University of Edinburgh on the graphic novel, Jerakiaarlap, which posits a futuristic return of Marshallese, after their forced migration, to their now-transformed ancestral islands. Munro Te Whata (Maori-Ninuean, Aotearoa, Niue), Edinburgh University academic Michelle Keown, and Jetñil Kijiner collaborated on the graphic adaptation History Project: A Marshall Islands Nuclear Story.

Honolulu-based activist Joy Enomoto (kanaka maoli and Caddo Indian) presents her mixed media work Nuclear Hemorrhage: Enewetak Does Not Forget, a reflection on the forever changed lands and waters of the Marshall Islands. Her work is synchronous with Basket, verses by poet No'u Revilla (kanaka maoli and maohi-Tahiti).

The curtain and mural installations by Alexander Lee (Hakka, Tahiti) reflect on the nuclear history of French Polynesia through Pere, the Polynesian goddess of fire, and breadfruit tree leaf motifs, metaphors for transformation.

Tahiti-based Chantal Spitz (maohi) will read from her novel Island of Shattered Dreams, set against the background of French Polynesia in the period leading up to the first nuclear tests.

Indigenous Samoan Dan Taulapapa McMullin is a painter, poet, writer, and filmmaker whose video poem installation, Clouds, addresses nuclear testing and settler racism in Micronesia and French Polynesia utilizing the metaphors of clouds as erasures of peoples and the environment.

Miriuita "Micki" Davis (Chamorru) presents Pacific Concrete: Portrait of Christian Paul Reyes, an in-



Above: Miriquita "Micki" Davis (Chamorru), *Pacific Concrete: Portrait of Christian Paul Reyes*, 2019, mixed media, photographs, postcard stand, fabric, guafak; Facing page: Alexander Lee (Hakka, Tahiti), *Te atua vahine mana ra o Pere* (The Great Goddess Pere), 2017, curtain (detail of installation)

stallation about her cousin with multiple congenital anomalies who survived only a year from his birth. It is highly suspected that his health anomalies were caused by his mother's radiation exposure in Guam during her pregnancy with him.

The artist reflects, "Christian Paul Reyes was only with us for a short time, but the love that his family gave him continues to this day. I remember him very clearly as a child, and later when his father would speak of him he would never refer to him in the past tense. He is present then, as he is today."



Anointed (film still), 2017, digital video, 6m8s, written and performed by Kathy Jetñil Kijiner (Majol-Marshall Islands), directed by Daniel Lin



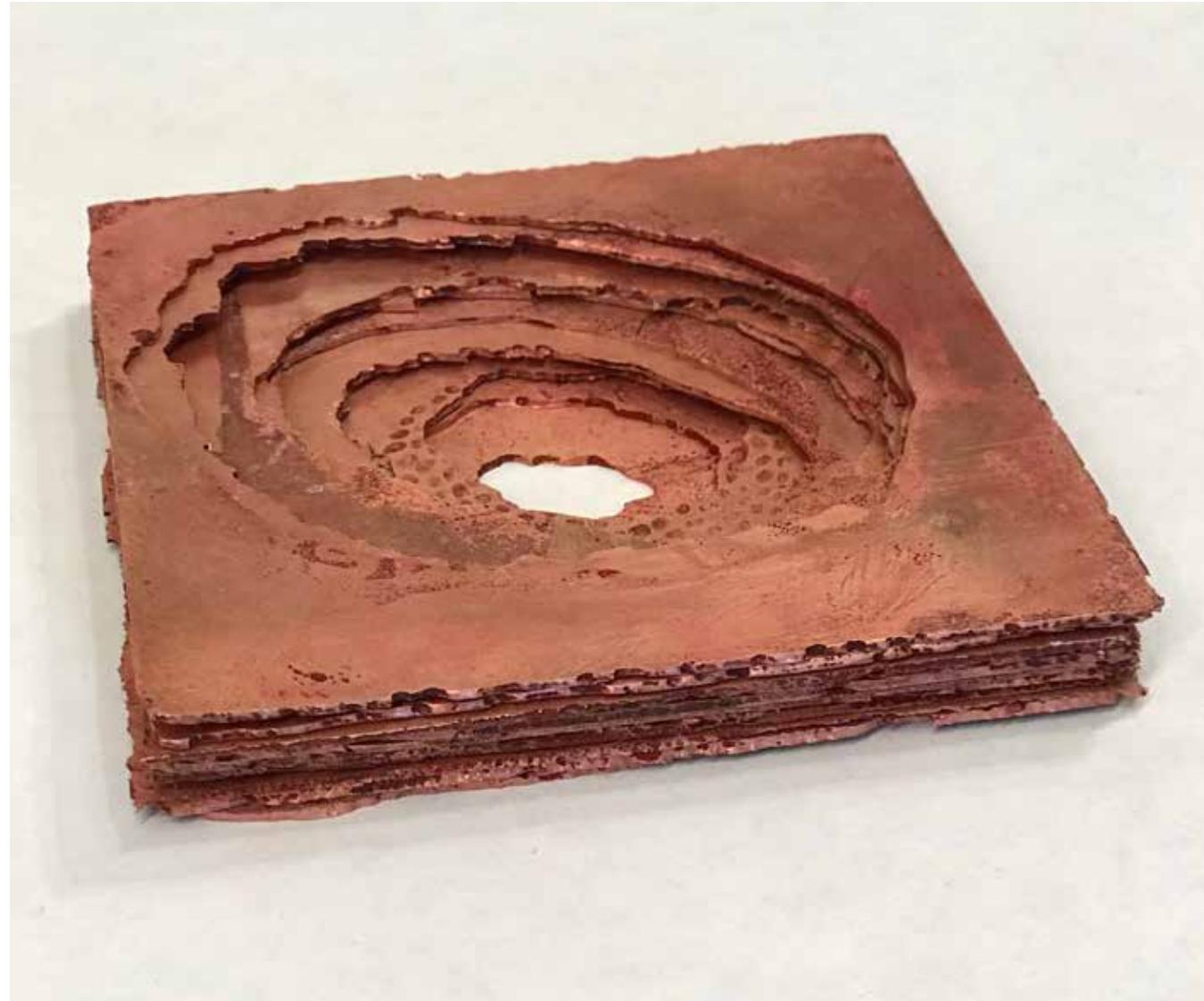
Joy Enomoto (kanaka maoli), Nuclear Hemorrhage: Enewetak Does Not Forget, 2017, watercolor and thread, 14 by 12 inches (unframed), Collection of Brandy Nālani McDougall



Dan Taulapapa McMullin (Samoa), Rain, photo-collage, 2020, 8 by 10 inches



Solomon Enos (kanaka maoli), illustrations for *Jerakiaarlap* (graphic adaptation), oil on paper, each page 12 by 8 inches (unframed)



Liz Chalfin, Pit 1 (in progress), 2020, repurposed copper plates with etched text about the Berkeley Pit Copper Mine, Butte, MT, 4 by 4 by 3 inches

## ZEA MAYS PRINTMAKING

[WWW.EXTRACTIONART.ORG/ZEAMAYSPRINTMAKING](http://WWW.EXTRACTIONART.ORG/ZEAMAYSPRINTMAKING)

### GREEN TO THE EXTREME

Established in 2000, Zea Mays Printmaking (ZMP), a recognized global leader in safer printmaking practices, continuously engages in ongoing research to develop new techniques, and teach best practices in printmaking.

Located in Western Massachusetts in a spacious two-story repurposed former factory, ZMP is a professional printmaking facility that provides studio

access and services not only to its 100+ members but also to artists worldwide. ZMP utilizes the latest equipment, technology, workshops, residencies, internships, artist mentorships and contract printing services to promote and advance safer, high quality printmaking. Since its inception, Zea Mays Printmaking's core mission has been to create artwork that utilizes methods that focus on environmental sustainability and non-toxic materials. The success of this approach is borne out repeatedly as ZMP's members exhibit and curate challenging, experimental, provocative and aesthetically pleasing work in intaglio, relief, serigraphy, photopolymer,



Helen Schmidt, Map I, 2019, Intaglio, Collograph and Chine Collé, made from materials that were found on walks the Artist has taken: fallen birch bark from the woods, sheet metal rusting on the side of railroad tracks, wooden boards taken from a discarded old-fashioned suitcase, 20 by 28 inches

monotype, collagraph, and mixed media printmaking. Taking into account Zea Mays Printmaking's dedication to health and the larger natural world, participating in EXTRACTION: Art On The Edge Of The Abyss is an opportunity to expand a cornerstone of its organization. A volunteer Extraction committee was formed to assure its involvement is comprehensive and long lasting.

The membership of ZMP is a community of working artists united around a common commitment to create substantive art while attempting to rectify the toxicity of printmaking materials that are most often pillaged from our environment.

ZMP's contribution to EXTRACTION: Art On The Edge Of The Abyss is a multi-year, multi-pronged program that includes education, practice and exhibition. This plan is composed of three major compo-

nents: challenging ourselves as artists to re-examine our personal practice; community education about alternative ways of making prints; exhibitions to "raise a ruckus."

We challenged our community of artists to make artwork works employing materials that were repurposed, plundered, rescued, recycled, upcycled, traded, appropriated, or found. To facilitate this concept, Zea Mays Printmaking launched Unlikely Materials Swap held in September 2019 and February 2020. Members descended on the studio with used materials ranging from papers to used copper and zinc plates that could be sanded down. There were half tubes of ink, wood scraps, plastic pieces, drawing tools, and more. All materials were free. The first event was such a success a second was scheduled for February 2020, but with an added pre-



Arch MacInnes, *Black on Green*, 2020, monoprints

sentation of the mission of EXTRACTION: Art On The Edge Of The Abyss. A discussion followed that highlighted some of the projects in progress including formulas for making inks and paper, to the results of mining and its inevitable repercussions on the labor movement, to examples of extinction, to the reuse of extracted materials such as copper that is repurposed as a sculpture and print simultaneously. A membership potluck dinner concluded the event to strengthen our nexus and share concepts.

As with the rest of the world, ZMP's physical space came to a halt in March due to the Coronavirus pandemic. Committees continued to work via Zoom bringing the first exhibition, EXTRACTION: *Green To The Extreme* to fruition. The show will present thirty-eight member artists' work and their response to the call to "raise a ruckus." EXTRACTION: *Green To The Extreme* will be on view at A.P.E. (Available Potential Enterprises, LTD), Northampton, MA from October 4 through November 1, 2020. In 2021 our Extraction program will conclude with a final exhibition at Augusta Savage Gallery, UMASS Amherst. In addition, alternate preparations for speakers and other exhibitions are in the process of reconstruction to accommodate social distancing, safety, and online support.

Zea Mays Printmaking has placed a bull's eye on the unconscious violence of waste and overconsumption in daily routines. Artists have a responsibility to acknowledge their contribution to the degradation of the earth and the social repercussions that result. Every new tube of cadmium, every recently purchased copper and zinc plate, every newly acquired toxic medium contributes to this irreversible calamity. Through mindful examination of habits and routines day-in and day-out, the capacity to change becomes possible. Day-to-day practices = best practices = social practices. As the late Honorable John Lewis is often quoted, "Make trouble, good trouble." Using our platform as artists, raising a ruckus to save our planet and prevent apocalyptic disasters seems to be the least we could do.



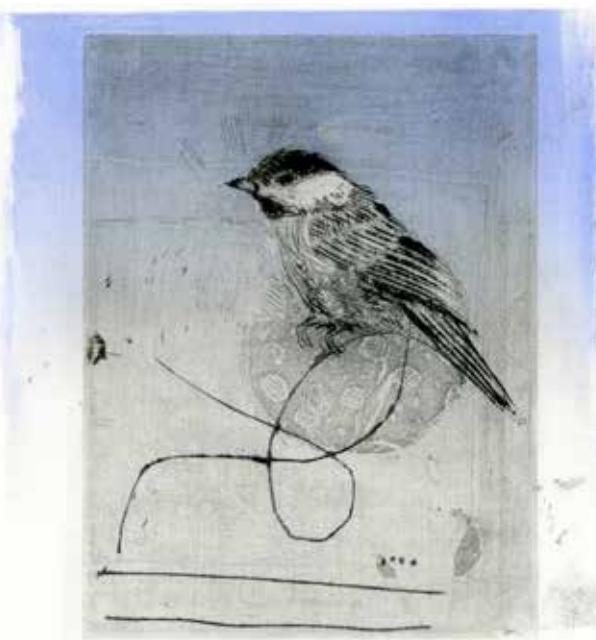
Elisa Lanzi, *Stone Washed* (in progress), 2020, cloth book, upcycled denim jeans, scraps of cotton discarded fabric, and handmade paper made from used blue jean pulp



Sara Farrell-Okamura, *One Mountain, Two sides*, 2020, paper (remnants from Crane Paper Co.), rejected silkscreen prints, drawing executed using oilbars from unlikely materials exchange, 40 by 26 inches



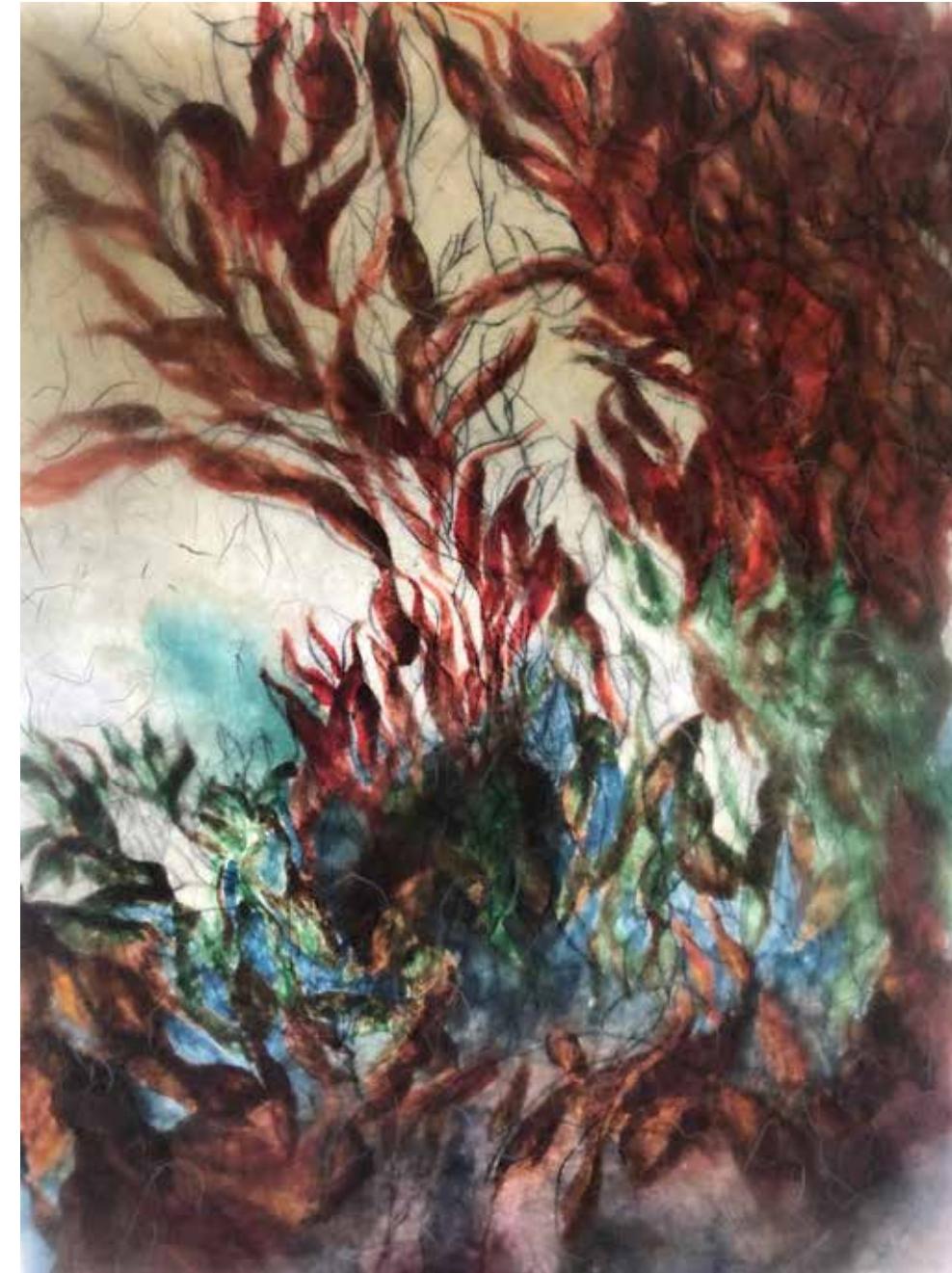
T. Klacsman, Extraction 1, 2020, linocut and polyester lithography with ink and thread on repurposed map, 19.5 by 24 inches



Lynn Peterfreund, Chickadee/Chaos, 2020, Etching, Aquatint, Monotype on repurposed copper plate, 6 by 7 inches



Angela Earley-Alves, Ocean Afghan (in progress), 2020, A baby sized blanket woven from repurposed dyed gloves



Olwen Dowling, Giant Kelp Bed, 2020, watercolor, monoprint, drypoint with draped waxed mulberry rice paper, 16 by 20 inches



Sarah Creighton, untitled, 2020, printed from repurposed photopolymer and aluminum plates, re-imagined previous work using old cut-off papers to dye for chine colle inlays

## MATERIALITY RE\_MINED:

### THE CELL PHONE LOOKING AT ITSELF

WWW.EXTRACTIONART.ORG/SEAGERGRAY

Brooke Holve and Catherine Richardson

During July of 2021, Seager/Gray Gallery of Mill Valley, CA will feature: *Materiality Re\_Mined; The Cell Phone Looking at Itself*, an installation by two Sonoma County artists, Brooke Holve and Catherine Richardson, that looks at the impact of cell phone usage on the environment. The cell phone will take a “selfie” of itself in the context of a multi-media installation—its shape inspired by the “teardown” diagrams of a cell phone and its materials informed by the minerals extracted and processes used in the manufacturing. Mini projectors (that resemble cell phones) will be installed as integral parts of the installation, projecting still and moving images that reference processes of mining.

Two-thirds of the world’s population (of 7.69 billion) are connected by mobile phones according to data from the GSMA Company. There are more cell phones than people. Cell phone usage is rampant and versatile as users make and receive calls, texts, and emails, take photos and videos, record audios, conduct research, play songs, download and use apps, and navigate their environments. But how many users are aware of what is involved in the making of them, the environmental impact on the earth, and the effect on ones’ relationship and attention to the natural environment?

The artists state, “We are implicated users as the cell phone has become an important tool for our work. However, as we researched this topic, we became aware of how little we knew about this tool that we daily hold in our hands—how it was made, and the materials, sources, and resources that went into its making.”

Mobile phone devices could not exist without mineral commodities. More than one-half of all components in phones—including its electronics, display, battery, speakers, and more—are made from mined and semi-processed materials. Looking at the periodic table, of the eighty-three stable (nonradioactive) elements, at least seventy of them can be found in smart phones. Metals are what make smartphones so “smart” and phones may contain up to sixty-two different types of metals. The installation will highlight three: two of the ten top minerals that power phones—copper and lithium—and one rather obscure group, the rare-earth metals—that play a vital role.

#### ABOUT THE ARTISTS:

BROOKE HOLVE

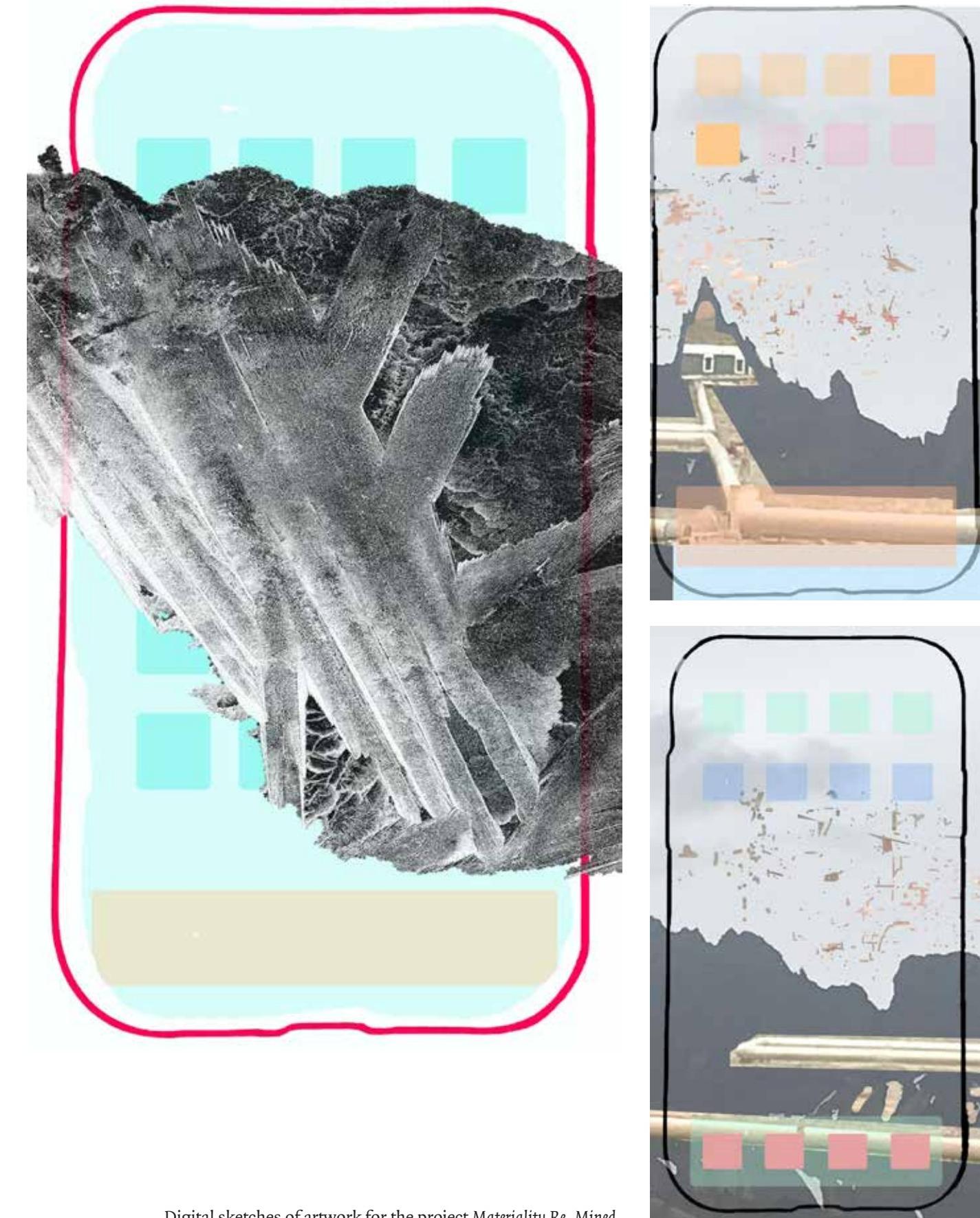
WWW.BROOKEHOLVE.COM

Brooke’s latest work is about the nature of shaping processes. She is a Sonoma County artist living and working out of her studio in Sebastopol, CA.

CATHERINE RICHARDSON

WWW.CATHERINERICHARDSONART.COM

Catherine, whose work scopes the landscape genre, is a British citizen currently living and working out of her studio in Sonoma county. She earned a BA from Art college in London, England and an MA from JFKU, Berkeley Annex.



Digital sketches of artwork for the project *Materiality Re\_Mined*



To gather inspiration and material for this project, Holve and Richardson traveled to artist residencies in Iceland and Ireland, visiting mines when opportunities surfaced. One was the Allihies Copper Mine on the Beara Peninsula in County Cork, Ireland. During the visit, the artists were surprised to learn of the mine's connection to Butte, Montana, home to both the Berkeley Pit and Edwin Dobb, one of the originators of the Extraction Project. When the Allihies Mine closed in the 1880's, there was a diaspora of miners and many emigrated to Butte to work in the Anaconda Copper Mine.





## KALA INSTITUTE

[WWW.EXTRACTIONART.ORG/KALA](http://WWW.EXTRACTIONART.ORG/KALA)

### SIX ARTISTS SHARE THEIR VISIONS FOR EXTRACTION

Elizabeth Addison	Robin McCloskey
Archana Horsting	Jenny Robinson
Barbara Foster	Beth Davila Waldman

We are a group of six one-time California-based artists responding to the effects of industry and climate change on landscape and cultures. Coming from different generations, but with a shared experience as artists at Kala Art Institute, we present here a selection of works for the CODEX Foundation's special project EXTRACTION: Art on the Edge of the Abyss.

Elizabeth Addison's artwork highlights global interconnected environmental and societal degradation by responding to exuded toxins of past and present, from Lower Manhattan to Seattle's Gaswork Park, to the former Berkeley Pacific Steel Casting industry that shut down in 2018.

Kala's founder Archana Horsting's artworks on paper reference David S. Wilson's 2002 photographs of the Oriental Mine Stamp Mill near Allegheny, New York.

Barbara Foster presents a selection of works from her clamshell book *Hanging Fire* documenting the effects of the Arizona Copper Queen Mine on over a century of family history going back to 1895. Her work draws parallels between this American mine and the famous Voreux Mine in Denain, France.

Robin McCloskey's works on paper study the effects of climate change on sites throughout California, particularly patterns of migration and the extreme weather conditions plaguing our state.

The works of Jenny Robinson's *Gasometer Series* have become unintentional historical records as many, including the one presented here, have been decommissioned and sadly removed from London's skyline. The series was inspired by the massive power stations along the Thames and the seemingly unnoticed structures around them.

Beth Davila Waldman's relationship to the shifting landscape of her maternal homeland (and the world's second largest exporter of copper), Arequipa, Peru, inspires her 2019 mixed media photographic and painterly works on commercial tarp within the context of prosperity, poverty, and abuse of power.

Facing page from left to right:

Elizabeth Addison, Gasworks Seattle-Mandala 042519, 2019, image size 16 x 16 in, paper size 30 x 22 in, edition of 10

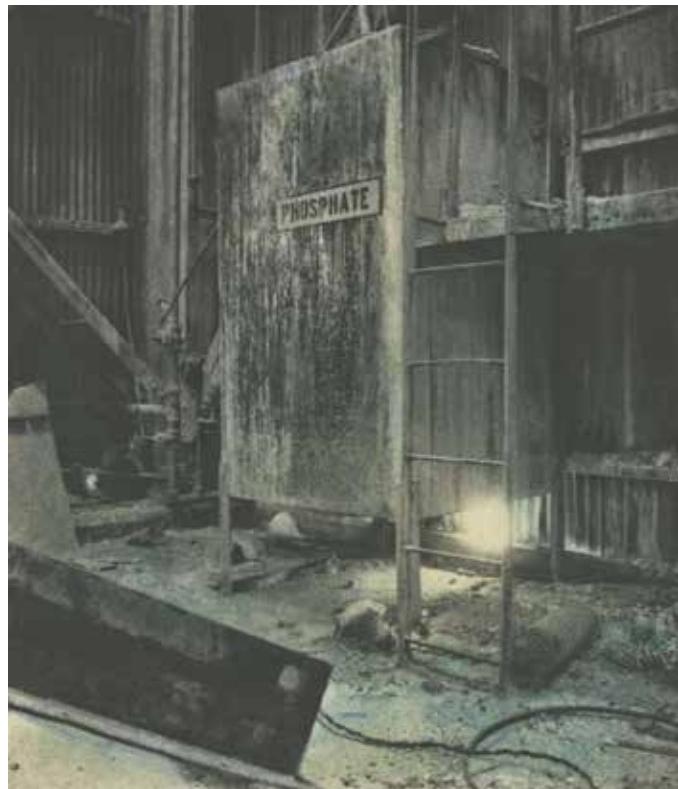
Elizabeth Addison, High NYC-Mandala 082419, 2019, image size 16 x 16 in, paper size 30 x 22 in, edition of 10

Elizabeth Addison, Meteorite-Mandala 081819, 2019, image size 16 x 16 in, paper size 30 x 22 in, edition of 10

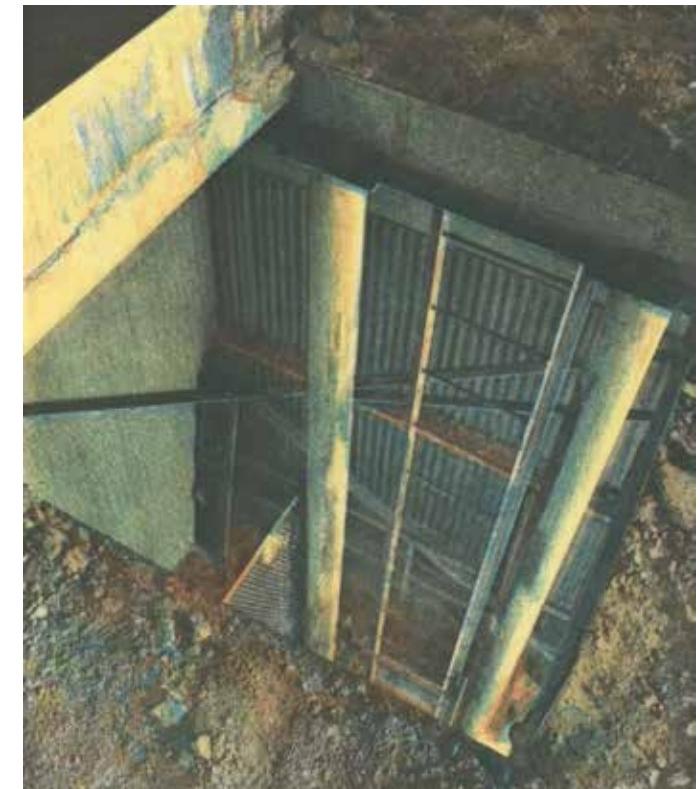
Each Daily Practice artwork represents a day in my life and responds to real-time happenings—environmental, political or social issues, my inner life and observations. For the past two years, I've learned to work smaller, without a studio, and to transform images digitally, accommodating for frequent travel. Many experiences have highlighted interconnected and global environmental and societal degradation.



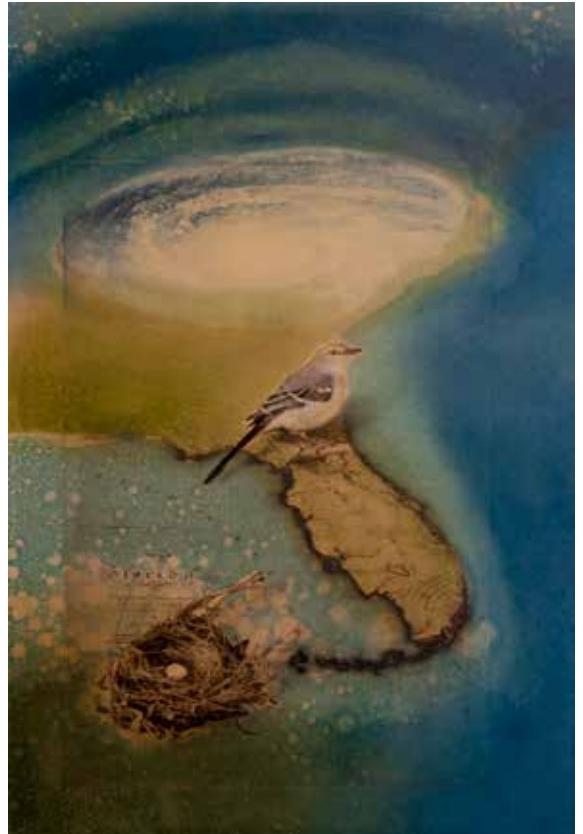
Above: Archana Horsting, Mine (Referencing David S. Wilson's Oriental Mine Stamp Mill near Allegheny, NY), 2012, paint stick on paper



Left: Barbara Foster, Hanging Fire #9; Right: Barbara Foster, Hanging Fire #5



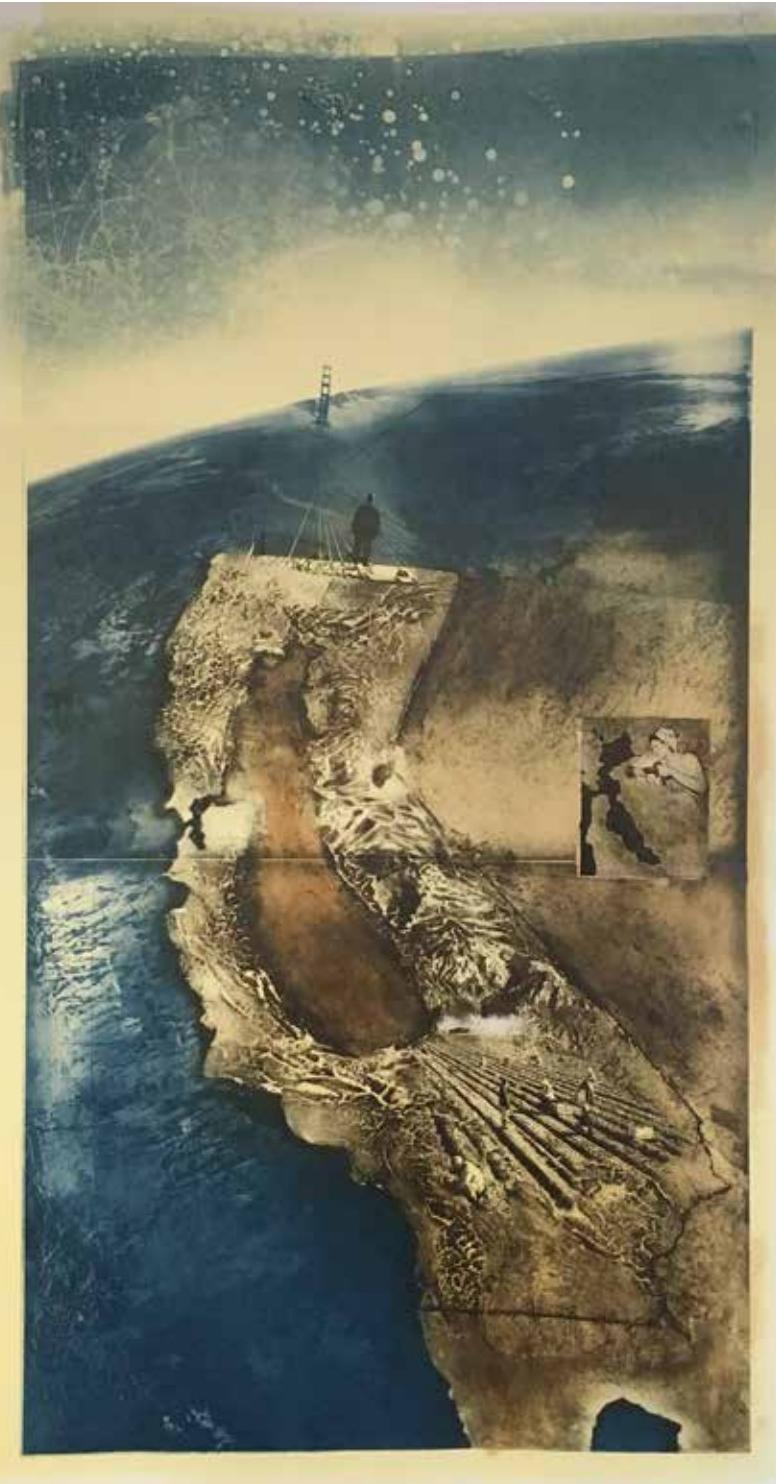
*Hanging Fire* is a clamshell book that includes letterpress-text and hand-printed photogravure/lithographic images, documenting a century of family history dating from 1895. At the center of this effort is Arizona's Copper Queen Mine with its auxiliary buildings, and offices in Bisbee and Douglas. For several years, my aunt, Helen, guided me through our family's connections to the mine with stories and tours of the area, and I credit her with instilling in me the desire to tackle this subject matter. The title of my book is derived from her use of the term hanging fire (hanging meaning pending or delayed).



Robin McCloskey, Florida #1, photopolymer etching, monotype 22 by 15 inches

This print was made shortly after Hurricane Irma caused the evacuation of the Florida retirement community where my mother lives and significant damage to the entire area. Climate change is predicted to have devastating effects on Florida. Increasingly larger storms wreak havoc on a landscape that has been over-developed, resulting in loss of habitat for numerous species including the Northern Mockingbird, the State bird of Florida as well as the loss of homes for its human residents. As Meghan Mayhew Bergman wrote in The Guardian in February 2019:

"The climate change-induced real estate crisis is imminent in the south, and it's going to have a brutal impact on those who can't afford new insurance, relocation, lowered property values, or bandages such as private sea walls."



Robin McCloskey, California #1, photopolymer etching, monotype, chine colle, 36 by 21 inches

This print pays homage to the California landscape and the working people who have made our state what it is. While we celebrate their industry, we must recognize that progress comes with a cost. Our farms in the fertile Central Valley are starved for water during drought years, our buildings pave over fragile environments and our technological advances come with unexpectedly high costs to our privacy and threaten our democracy.



Left: Beth Davila Waldman, La Ocupación No. 2, 2019, Acrylic Paint and Pigment on Tarp Mounted on Panel, 60 by 87 inches  
Right: Beth Davila Waldman, La Ocupación No. 3, 2019, Acrylic Paint and Photo Transfer on Tarp Mounted on Panel, 40 by 58 inches

The theme of sanctuary, of shelter—of home—is at the root of Beth Davila Waldman's work, primarily in relationship to the shifting landscape of her maternal homeland in Arequipa, Peru. Arequipa is the second largest exporter of copper in the world. Here, prosperity is dependent on extractive industry, and abuse of power runs strong. The scars left by these operations are not only visible on the landscape, but also on the individual. Waldman's 2019-2020 series "La Ocupación" uses commercial tarp as her canvas, referencing the tarp materials literally used as the walls of people's homes in the developing communities on the outskirts of Arequipa. In her mixed media paintings, the colors and textures of the tarp support peaks through printed and painted pigments. The photographic imagery of the local landscapes and the walls of local homes merges with acrylic painted abstractions. The scarred skin quality of the paint echoes the experiences individuals and society at large have absorbed as a consequence of extraction on industrial and domestic levels.

Right: Jenny Robinson, Gasometer London, 2012, Monoprint with Drypoint, 60 by 40 inches

The Battersea Gasometer, built behind the massive edifice of the now decommissioned coal powered Battersea Power Station on the River Thames in London, is from a series of prints I made about the massive power stations along the Thames and the unnoticed, but to me, beautiful, structures around them. These prints have now become unintentional historical records as many, including this one, have been decommissioned and, sadly removed from London's Skyline.

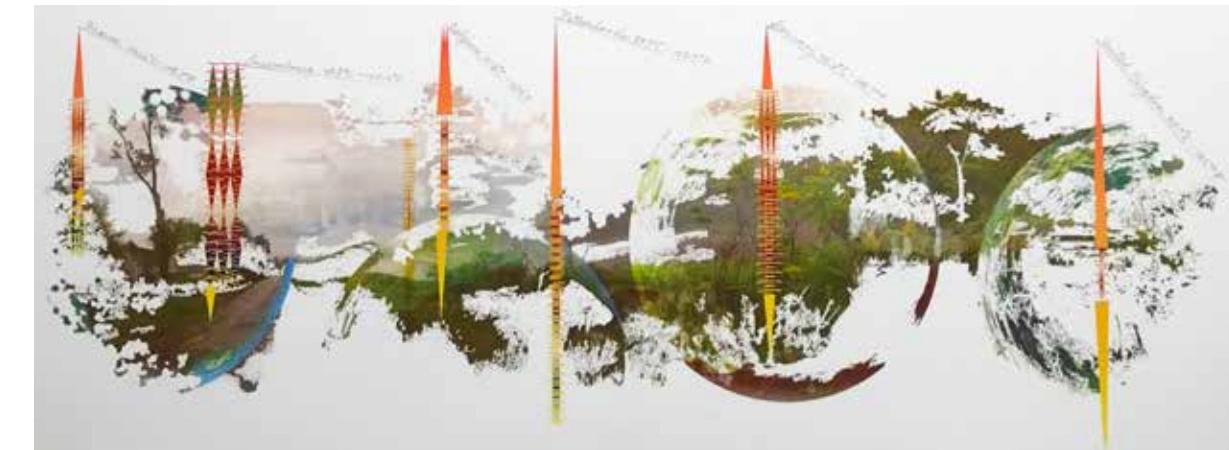
Built to store gas from the nearby gasworks to use for lighting houses and streetlights, Gasometers were a well-known part of the British urban landscape and are historically important as a reminder of the world's dependence on fossil fuels.

In 2019, the rise of renewables has edged out coal and gas plants with low-carbon energy used to generate more than half of the electricity used in the UK. But with developed countries like America, China, India and Germany increasing their coal use as well as Australia coming in 1st per capita as a coal using nation, the world has a long way to go before renewables are the norm.



# artists@HOME

saying **NO** to industry destroying the place we call home



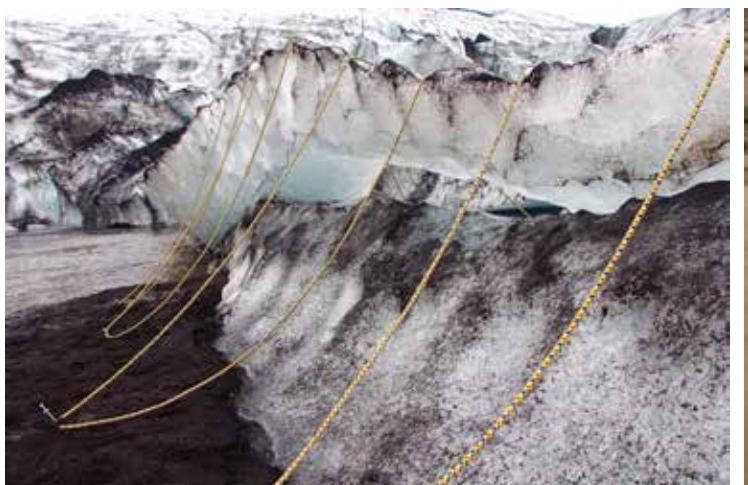
Daria Dorosh, detail from *Haunted habitat*, July 2019.

Artists @HOME is a large-format book project by artists in the A.I.R. collective to address the impact of extractive practices on our home environments.

2020 is the year of sheltering in place. Economic activity, that under normal circumstances is unstoppable, has been slowed to a halt. Amidst the lockdown, smog clouds are reverting to blue skies, dolphins are reappearing in Venice lagoons, and large cats are napping on highways in Africa. COVID-19 has imposed a slowdown on economic activity world wide and interrupted the fragile social ecosystem that we took for granted.

In the midst of the human tragedy of lives lost and financial disruption brought on by the pandemic, we take this opportunity to challenge the imperatives of the linear progress that we live by. Our home environments are interconnected. The imminent creation of a high pressure fracked gas transmission pipeline underfoot in Brooklyn, the displacement of entire communities from the city, the threat of rising seas, all in the name of economic development, are only a few of the points of pressure. This project is an open invitation to the artists of the A.I.R. collective to think about where they find those points of pressure in their personal and community environments, and to bring awareness to them through their work.

Established in 1972  
as the first not-for-profit,  
artist-directed and maintained  
gallery for women artists  
in the United States.



Left: Tammy West, Stay Put, Site specific installation created at Solheimajökull, a glacial tongue of the larger Mydalsjökull glacier, Iceland with a glaciologist from Háskóli Íslands Institute of Earth Science; Right: Raheleh Minoosh Zomorodinia, Destruction of Nature, Destruction of the Human being, Maranjab, Iran, 2008

# **WOMEN ECO ARTISTS DIALOG (WEAD)**

WWW.WEADARTISTS.ORG

Women Eco Artists Dialog (WEAD) is a pioneering network of feminist ecoartists, educators, curators, and writers working toward the goal of a just and healthy world. We focus on women's unique perspective in ecological and social justice art. WEAD maintains an invaluable website that serves as a virtual directory of eco artists' work, connects artists and curators with exhibition opportunities, and educates and enlightens through its ground breaking WEAD Magazine.

As a 501(c)(3) nonprofit WEAD's purpose is threefold: To provide information regarding the ecoart and social justice art fields to artists, curators, writers, art and public art administrators, educators in art and ecology, cross-disciplinary professionals, and others. To facilitate international networking among artists working with ecological and social justice issues. To further the fields of, and the understanding of, environmental and social justice art.

WEAD does not subscribe to a single definition for ecofeminism or ecoart, nor one set of cultural, political, or social beliefs. Instead, WEAD celebrates a spectrum of differences under the colorful collective umbrella called ecofeminist art. Here women speak in their own voices, define their own work and map their place in the world. Together we work toward a just, sane, healthy world for all.

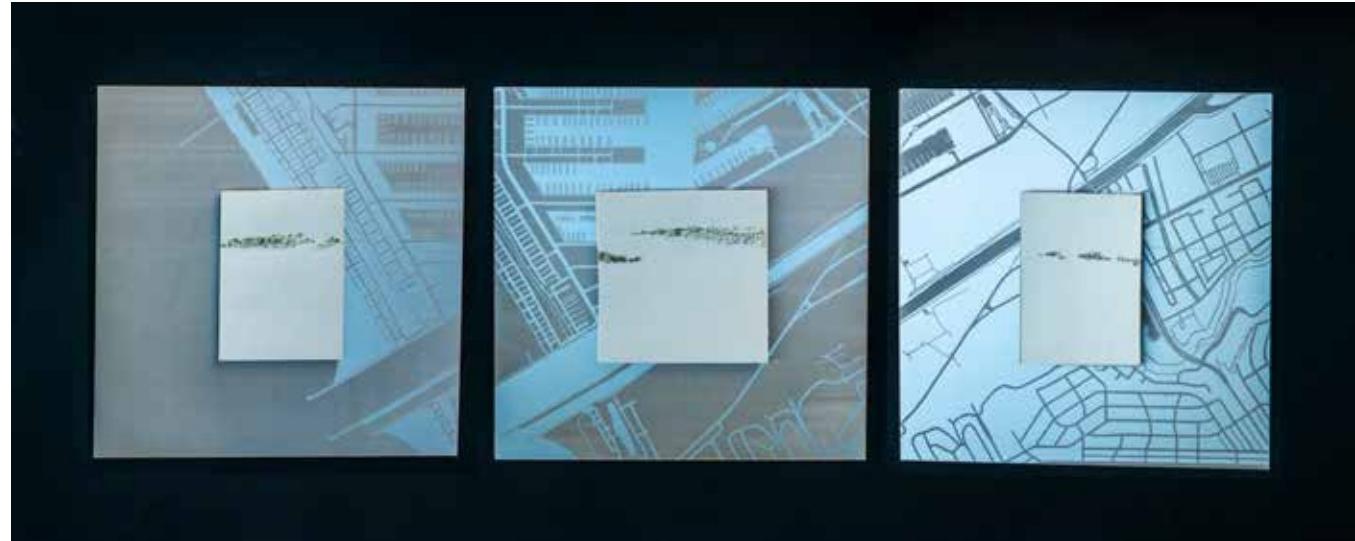
Environmentally focused exhibitions and events scheduled for 2021 include: *Emotional Numbness: The Impact of War on the Human Psyche and Ecosystems*, an international exhibition—on view at Platform 3, Tehran, Iran in the Fall of 2020—which continues online in a 3D interactive gallery. Other offerings include *Traces*, at the Danville Theatre Gallery, Danville, California in early spring; a summer extraction-themed exhibition; a fall exhibition at Gallery Route One in Point Reyes Station, California; a robust series of online programming on ecoart and environmental themes; and finally, our annual magazine which is published each fall.



Christina Berteau, *Caution Tape: Do not take what has not been offered*,  
Assemblage of leather suitcase, plywood, globe, antique wallpaper,  
text on parchment, luggage labels



Bonnie Peterson, Permafrost Distribution, Embroidery on silk



Beatz Jaramillo, *In Between: Wetlands in L.A.* (detail), 2020, engraved aluminum, porcelain and iron

## SUPERCOLLIDER

[WWW.EXTRACTIONART.ORG/SUPERCOLLIDER](http://WWW.EXTRACTIONART.ORG/SUPERCOLLIDER)

### EXTRACTION: EARTH, ASHES, DUST

Curated by Isabel Beavers + Sharon Levy

SUPERCOLLIDER presents EXTRACTION: Earth, Ashes, Dust, an exhibition exploring themes of extraction. The works in this exhibition examine the overarching power structures that dictate methods of extraction as they relate to cultural, natural, and ecological capital. Artists challenge notions of the map, explore both healed and broken landscapes, and embody methods of extraction and generation. Using a range of media, the work challenges systems that co-opt embodied experiences with the land and disrupt the biophilic nature of the human experience. Through their work, these artists ask: what possibilities exist for human's place in the pluriverse?

What results from this exhibition is a constellation of artistic expressions that uniquely consider the many facets of the late-stage capitalist zeitgeist: drawing connections between disparate entities—land, body, community—that expire in the pursuit

of progress, the excitement of the new, and the movement of dominating forces towards mechanisms of control and erasure.

SUPERCOLLIDER believes in a future where art, science, and tech collide to inspire social and environmental responsibility. We create immersive science + art experiences—including (inter)nationally curated satellites for pop-ups, festivals, and research institutes—that vividly reclaim our future and explode our present.

Located at the Beacon Arts Building in Los Angeles, CA, SUPERCOLLIDER is the Mothership (HQ) for sci+art+tech exhibitions in greater Los Angeles and beyond. We feature bi-monthly exhibitions and extend our curations via Satellites to local and (inter)national spaces. Our mission is to drive persistent conversation about the future of our home planet.

#### FEATURED EXHIBITING ARTISTS:

Beatz Jaramillo

Isabel Beavers (*Artificial Ecologies*)

Julian Stein (*Artificial Ecologies*)

Katie Gressitt-Diaz and Zane Griffin, *Talley Cooper*

Maru Garcia (*Artificial Ecologies*)

Richelle Gribble (*Artificial Ecologies*)

Sarah Jenkins



Beatz Jaramillo, *Broken Landscape 3*, 2015, porcelain and paraffin

Beatz Jaramillo's porcelain and mixed-media sculptures address the interior and exterior tensions that are produced from breaking one's connection with the natural world. What transformations and degradation of land results?



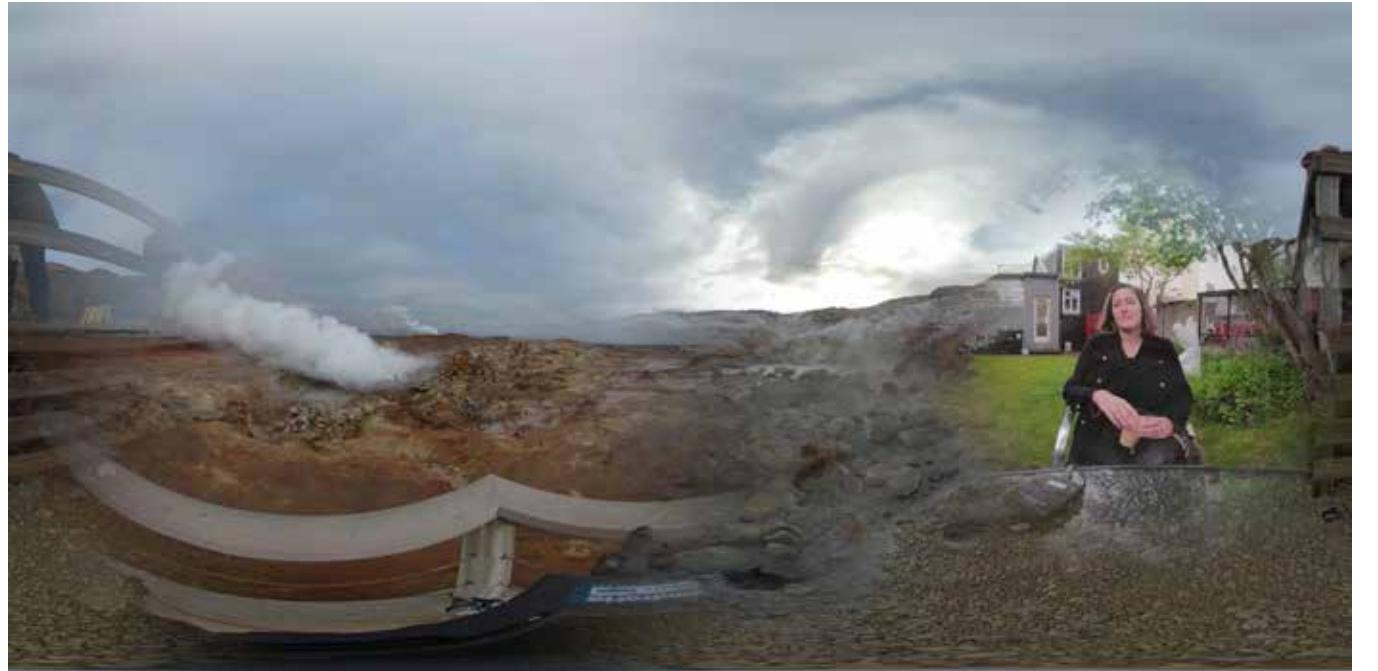
Sarah Jenkins, *Patch Work*, 2017, stop motion animation, video, sound

Sarah Jenkins' stop-motion films consider the unseen labor in Appalachia. Jenkins touches objects thousands of times, a hand invisible to the camera. The work speaks to the inherent contradictions in extractive industries: they at once generate wealth while also deeply scarring the land and the body. This work presents a troubling dynamic of our reliance on, and abuse of, ecological systems.



Sarah Jenkins, *Patch Work*, 2017

Sarah E. Jenkins (b.1989) is a multidisciplinary artist and educator from northern Appalachia. She has attended artist residencies at MASS MoCA (Massachusetts Museum of Contemporary Art) and Stiwdio Maelor in Corris, Wales. Most recently, she was awarded a MacDowell fellowship in Film/Video arts for the summer of 2021. Jenkins is an Assistant Professor of Digital Media & Animation at SUNY Alfred State College, and lives/works in Wellsville, NY.



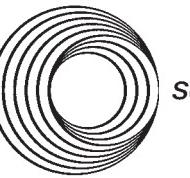
Zane Griffin, Talley Cooper and Katie Gressitt-Diaz, *Alchemical Infrastructures: making blockchain in Iceland*, 2020, 360° film and soundscape

The 360° film and soundscape *Alchemical Infrastructures*, by Zane Griffin, Talley, Cooper and Katie Gressitt-Diaz, exposes the blockchain industry in Iceland, juxtaposing the promise of emerging ‘democratic’ technologies with their immense demand for natural resources.

## CURATOR BIOS:

ISABEL BEAVERS is a multimedia artist and educator based in Los Angeles. Her work explores ecologies, examines environmental histories, and postulates about climate futures through multimedia installation and new media. She is a co-founder of Great Pause Project, Sci Art Ambassador with Supercollider Gallery, and 2019-20 Resident Artist with CultureHub LA. Her work has been exhibited at: SPRING/BREAK Art Show (2020); CultureHub LA (2020); SUPERCOLLIDER (2020); MIT Museum (2019); New York Hall of Science (2019); Icebox Project Space (2019); Boston Cyberarts Gallery (2019); Adelson Galleries (2019); Art Science Exhibits, Humboldt-Universitat zu Berlin (2018); Mountain Time Arts (2017); Emerson Contemporary Media Arts Gallery (2017). Upcoming Exhibitions include Maiden LA (2020); and Umbrella Center for the Arts (2021).

SHARON LEVY is from Atlanta, GA and graduated from Bard College with a B.A. in Studio Art and from the University of California San Diego with an M.F.A. in Visual Arts. She has had solo shows at the CSUF Grand Central Art Center in Santa Ana, CA in 2019 and the Santa Monica Museum of Art in 2007. She has participated in group exhibitions in New York, San Diego, Atlanta, Austin, Tijuana, and the Los Angeles area. She received an Acquisition Award as a West Prize finalist in 2010 and was a member of the Torrance Art Museum Forum cohort in 2019. She is a member of the artist collective Museum Adjacent, and a Sci-Art ambassador for SUPERCOLLIDER.



SUPERCOLLIDER

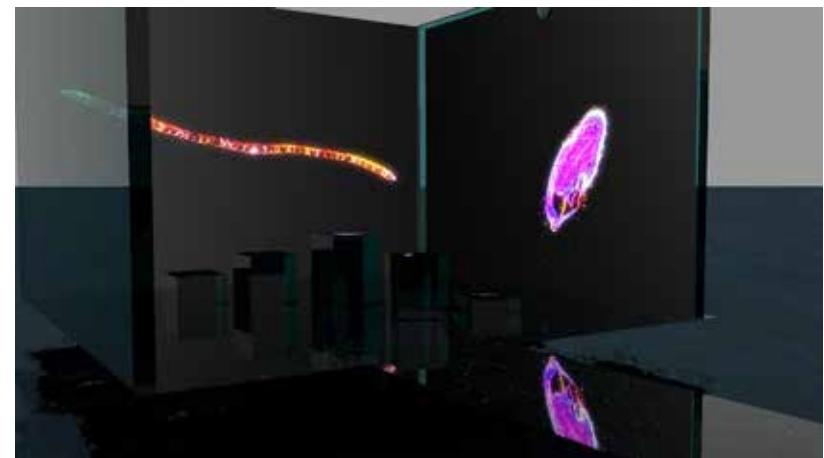


Richelle Gribble, *Left Behind*, 2020, 3D scanned drawings on recovered plastic from the Arctic Ocean, part of *Artificial Ecologies* (Virtual Exhibition), image courtesy of Isabel Beavers



*Artificial Ecologies* (Virtual Exhibition), image courtesy of Isabel Beavers

The group virtual exhibition, *Artificial Ecologies*, includes four artists: Maru Garcia, Isabel Beavers, Richelle Gribble, and Julian Stein. The works in this browser-based interactive art exhibition interrogate artificial materials in existing ecologies, position humans as remediation, and speculate future hybrid technoeologies following the impact of climate on local biodiversities.



Isabel Beavers, *Seed Bank*, 2020, virtual rendering of sound and video installation, part of *Artificial Ecologies* (Virtual Exhibition), Image Courtesy of Isabel Beavers

# SAN FRANCISCO CENTER FOR THE BOOK AND SAN FRANCISCO PUBLIC LIBRARY

WWW.SFCB.ORG WWW.SFPL.ORG

## RECLAMATION: ARTISTS' BOOKS ON THE ENVIRONMENT

June 2021 – September 2021

San Francisco Center for the Book and San Francisco Public Library will host Reclamation: Artists' Books on the Environment, a juried exhibition of artists' books exploring our relationship to the environment at this moment on the planet.

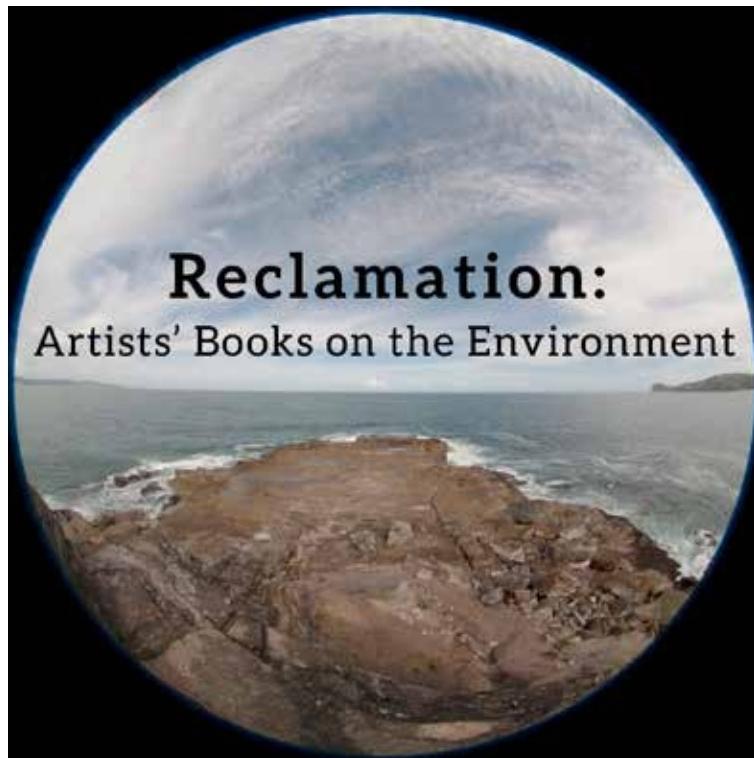
We live in a time of extremes. Nearly two decades into the twenty-first century thousands face uncertainties over food, shelter, and safety. Environmental concerns demand increasing attention, from rising temperatures and dangerous weather events, to crises in water quality, to multiplying fires... the list goes on, echoed around the globe.

Book artists create works that involve, educate, and inspire action. Book art takes many forms. Sculptural bookworks, for example, command attention so that viewers are compelled to reflect upon the issues explored in the work. Paginated artists' books rely on a reader's touch to encourage a measured exploration of complicated topics, one page opening at a time. Many compelling works integrate pagination with sculptural and material richness to create a multi-sensory reading experience.

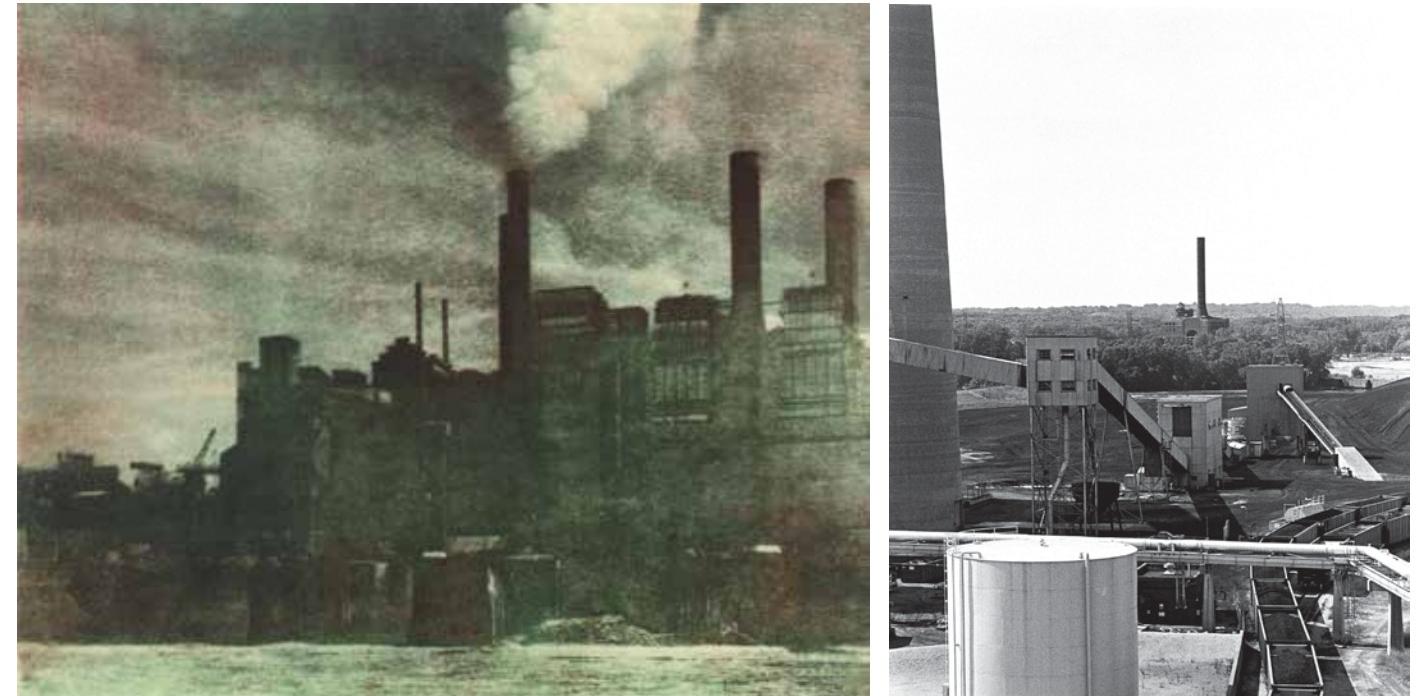
Reclamation: Artists Books on the Environment seeks to inspire and educate viewers to reflect on climate change and its impacts locally, nationally, and internationally. At the same time, the exhibition endeavors to avoid dualistic arguments common to today's divisive political scene.

Curated by Betty Bright (Independent Curator and Historian specializing in book art) and Jeff Thomas (Executive Director at San Francisco Center for the Book).

Jurors: Betty Bright, Mark Dimunation (Chief of the Rare Books and Special Collections Division at the Library of Congress), and Ruth Rogers (Curator of Special Collections at Wellesley College).



180 degrees of Palm Beach Headland 05/12/2010 by Nigel Howe is licensed under CC BY 2.0



Left: Kyle Gallup, Union Electric Power Plant, 1997, lithograph transfer print; Right: Paulette Myers-Rich, High Bridge Power Plant #3, 2007

## NO. 3 READING ROOM & PHOTO BOOK WORKS

WWW.PHOTOBOKWORKS.COM

Paulette Myers-Rich

No.3 Reading Room & Photo Book Works will be presenting a number of works on paper and photographs in its storefront windows, at 469 Main St., Beacon, NY. The reading room will also display and make available rare and unique artist and photo books that examine our relationship with place, the environment, displacement, nature, the impact of environmental degradation on indigenous peoples, as well as essays and poetry on these issues. Of particular interest is the book Black Diamond Dust, a documentation of the exhibition in 2014 that responded through art and installation to the extractive industries of Vancouver Island. This book was the inspiration for Extraction: Art on the Abyss. Artists who will be exhibiting their work at No.3 Reading Room include Ronnie Farley, Kyle Gallup, Zac Skinner, Mariam Aziza Stephan, and Paulette Myers-Rich.

No.3 Reading Room & Photo Book Works is an artist-run venue located in a Main Street storefront in Beacon, NY. Featuring select artist's books, works on paper, photo books and poetry from small, independent and artist-run presses, it's a site where readers can experience by hand, limited edition, handmade and innovative projects not widely found in traditional bookstores or galleries. Curated and focused, the program encourages visitors to spend time reading and exploring these selections. An archive of rare contemporary books and prints may be accessed by appointment. Please visit photobookworks.com to learn more. Contact photobookworks@gmail.com to make an appointment, or if you have any questions.

A project by Paulette Myers-Rich & Traffic Street Press.

# PIETÀ

## LAMENT AT THE EDGE OF THE ABYSS

For Violin solo, Chamber Orchestra and Prerecorded Sound.  
By Jerry Mader, composer, Whidbey Island, WA

Pietà will be premiered by The Sound Ensemble, Bobby Collins, director, with Karen Bentley Pollick, violinist, in Seattle, Washington, September 2021.

## REFLECTIONS ON A WORK IN PROGRESS

Jerry Mader

In September, 2018, amid a lively conversation with violinist, Karen Bentley Pollick, I first learned about the Extraction Project. Having just mentioned to her that I was a Montana ex-pat, Karen asked if I knew Peter Koch. I hadn't thought of him for years but I certainly did know him. We had traveled the same social circuit in the shadows of the University of Montana in Missoula during the 1960s and 70s, and then went our separate ways; me to Seattle, him to Berkeley.

Karen then outlined what she knew about the Extraction Project, and, since we had just talked about a possible collaboration (I said I would like to compose a piece for her), we wondered if a piece performed at the Berkeley Pit in Butte, MT would be worth pursuing. The rest, as they say, is history.

I reconnected with Peter who in turn connected me with Ed Dobb, who immediately took great interest in the notion of new music performed at the Pit. Subsequently, Ed and I spent many hours on the phone and many emails exploring all manner of issues, especially the physical and political ones we would encounter in mounting an on-site performance. At the core, however, was Ed's profoundly simple question—one which forced me to

deeply consider my position as an artist in relation to my society and our collective response to the environmental catastrophe we all confront. Ed asked, "What kind of piece do you have in mind?"

I had to go deep. I had to define what I believe is the function of "Art" in society and, is political/social comment/pronouncement part of that function or, is "Art for Art's sake" all that should concern the so-called artist? "Going deep" meant I also had to re-examine my personal artistic and socio-political history.



My composing life began at age twelve and was spurred by the life and music of Beethoven. His life, driven by musical ecstasy and his conquest of encroaching permanent deafness was fuel for my young idealistic mind. "I will take fate by the throat... how beautiful it is to live, to live a thousand times!!" And: "Anyone who really hears my music will never again know unhappiness." He might not have said the latter, but it fits within the extravagant expanse of his artistic persona. It was certainly enough to inspire me to become an artist—a composer who believed that music can and does transform the hearts and minds of humankind.

Indeed, Beethoven's *Ode to Joy* as the finale of his Ninth (and last) Symphony was his plea for "brotherhood" in the wake of all he had witnessed in his lifetime; the French Revolution and its subsequent "Terror" of the guillotine, the rise and fall of Napoleon Bonaparte, and the emergence of Democracy in America. With his *Ode* he turns his back on the ills of humanity and directs us toward the pristine fields of Elysium and the embrace of a benevolent humanism.

I took Beethoven at his word and for fifty years produced art as celebration; of life, of humanity with all its moral ambiguities, and of art itself. Honesty of expression has been my only compass; i.e., to make humanity aware of itself and refuse

to falsify my report. From that position I have also abjured all manner of social protest or political art or any form of purposeful social comment. I still find that these are trite polite lies and self-serving efforts to be on the right side of "good" and "evil." Anthems for a Revolution or an Inquisition have never interested me. It is ironic and daunting, therefore, to find myself now attempting an art work in response to the planetary crisis we all confront and the invitation to contribute to the "Extraction Ruckus." Edwin Dobb's question looms large.

At this juncture, after 50 years' observation of human behavior, my opinion of it has led to misanthropy. This is because over the long reach of human history, we have failed to define or agree upon what we are, where we came from or where we are going. Rather, we cling to elaborate delusional fantasies and hallucinations about human nature, the origins of life and the natural world, despite all the evidence from science. We would rather believe in fictions and imaginary beings than know the truth, and our beliefs are literally killing us; in particular, the one which claims our rightful dominion over nature and our right, therefore, to survive at its expense. Indeed, it is our rampant drive for self-preservation through technology that has brought the ultimate collapse of the environment into the realm of possibility. It is clear, in fact, that we have passed the "tipping" point to stop global warming. The best we can hope for is a way to adapt and somehow abate the cascade of climate change. In the end, accepting as I do, the theory of evolution as the correct story of life, I cannot see humanity as anything more than another branch (albeit a toxic one) on the evolutionary tree with no overarching value over the rest. Indeed, the remainder would be better off without us.

Finally, in the face of it all, my twelve-year-old self's idealism has crumbled. If I ever really did believe it, I do not now believe that art is the means for change in human behavior. The famous *Ode* itself has become food for advertising jingles and the



Photo courtesy of Stephanie Mader

"go-to" programming choice for New Year's concerts and Fourth of July fireworks displays alongside the *1812 Overture*. It is obvious to me that the usual displays of moral outrage, appeals to save Gaia, or our so-called "better nature" have born little more than the thoughtful nod, the pitiful sigh, denial or a renewed faith in applied science and technology as the only solution. What kind of music could possibly redirect this quagmire of misunderstanding and hubris? Why then compose a piece of music as part of this "Ruckus," which may well be just "preaching to the choir?"

Because...

I find myself drawn, from those first conversations with Ed Dobb, and Peter, and Karen and, from the music in Beethoven's late quartets written as death approached amid the silence of his total deafness; drawn to say "something." To make something. To bring all of my despair and helplessness to fruition... Somehow... In the only way I know... In music.



The Berkeley Pit in Butte, Montana is a grave; an unsealed tomb containing the ghosts of humans and their gods who raped and murdered the very organism that gave them life. Ghosts whose residue

floats in the toxic waste that fills the 7,000 foot long, 5,600 foot wide, 1,600 foot deep cavity; a wound, a fistula on the bowels of the earth that will not heal.

I've seen the pit when it was a functioning mine and again now as it leeches its poisoned memory into the Gallatin Valley. I did not see the hundreds of dead snow geese floating on the surface of its lethal pond after they mistakenly landed for a rest during their annual migration in 2016.

I have come to the edge of the pit again and know it now as a metaphor for "The Abyss"—Dante's "Inferno," Homer's "Hades" with its own Styx and all the other mythical locations for Hell. And, I have come to mourn; to mourn for that which has been murdered; a murder in which I am complicit as is every other human on this earth. And my mourning has become a Lament. I am composing a Lament for the mother of us all. I have little choice but to cry out and sing for that which is gone and beyond the illusion of resurrections; an unredeemable death. I will sing it through the voice of a violin, an orchestra, human voices, sounds of nature, birds and the quaking of the earth itself. Beyond this I cannot say here what it will be in the end. As Isadora Duncan said, "If I could say it, I wouldn't have to dance it."

My Lament is a Pietà; in the spirit of the mother who cradles the body of her martyred child at the base of the tree... The tree of life... The cross of death. It is a Lament without promise. It will exist only to bear witness—

This is where we are—this is what we are—this is where we came from—this is where we are going.

Misanthrope? Yes. Negativist? Certainly. And yet...  
And yet...



"In the end, the negativist is no nihilist, for he affirms the void. Having endured a vision of the meaninglessness of existence, he retreats neither into self-pity and aggrieved silence nor into a realm of beautiful lies. He chooses, rather to render the absurdity which he perceives, to know it and make it known. To know and to render, however, mean to

give form; and to give form is to provide the possibility of delight—a delight which does not deny horror but lives at its intolerable heart."

— Leslie A. Fiedler, "No in Thunder," 1963.

Chorus: Did you perhaps go further than you have told us?  
Prometheus: I caused mortals to cease foreseeing doom.  
Chorus: What cure did you provide them with against that sickness?  
Prometheus: I placed in them blind hopes.

— Aeschylus, "Prometheus Bound"  
5th cent. BCE

### Pietà

Before she is turned away  
for the last time in the moment  
before the new world begins  
harrowing her like a field

and the sun and moon disappear  
and the stars and the houses  
suddenly become illustrations  
in a book no longer to be

believed burning to ashes—  
before the earth beneath her  
rises up through her body  
slowly, every green cell

yellowing in the aftermath—  
just before this begins and  
it begins constantly over  
and over in the secret nucleus

of mothers quietly humming  
at every second continuously  
she breathes the odor of honey,  
his hair still the odor of honey

— Steve Scafidi, 2001

The image shows a page from the score of the composition "Pietà" by Steve Scafidi. The score is written for a large ensemble of instruments, including woodwinds (Flute, Oboe, Clarinet, Bassoon), brass (Horn, Trombone, Tuba), strings (Violin, Violoncello, Viola, Bass), piano, tape, and a solo violin. The notation is dense with various musical markings such as slurs, grace notes, and dynamic changes. Several performance instructions are included, such as "full keyboard glass d.", "time cluster glissando", and "Bass drum". The page is numbered "-36-" at both the top right and bottom right corners. The background of the score page is yellowed.

A page from the score of Pietà. Photo courtesy of Jerry Mader



Catherine Daley, *The Source*, Photography, 31 by 25 inches. A traditional Wappo woman honors the land in Pepperwood Preserve and Mount St. Helena. The Wappo, who lived in balance with their environment for hundreds of years, consider the mountain to be the sacred source of life.

## CALABI GALLERY

[WWW.EXTRACTIONART.ORG/CALABI-GALLERY](http://WWW.EXTRACTIONART.ORG/CALABI-GALLERY)

### EXTRACTION: ART ON THE EDGE OF THE ABYSS

May 29th – July 31st, 2021

Our voracious consumption of natural resources is destroying the earth. There has been a collective denial and lack of action to respond to this crisis, especially among politicians. Artists have traditionally been in the avant-garde of thinkers and are uniquely positioned to translate the science of the situation into more visceral terms, which hopefully would have an impact on folks who have failed to grasp the gravity of the situation.

**CALABI GALLERY**



Calabi Gallery will be showing a group of artists with quite diverse responses to the crisis, all with powerful messages delivered through a variety of artistic mediums. Featured artists include Mima Cataldo, Catherine Daley, Robin A. Dintiman, Holly Downing, Molly Eckler, Art Hazlewood, Iva Hladis, Tyler James Hoare, Bernadette Howard, Evri Kwong, Emmanuel Catarino Montoya, James Spitzer, Bambi Waterman, and other artists to be added.

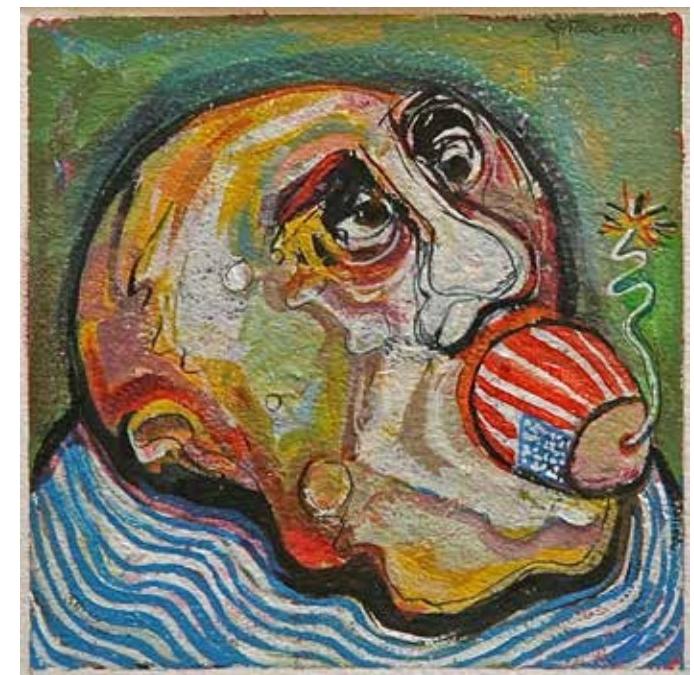
The gallery will also be hosting one or more poetry readings and folk music concerts in support of the concept of Extraction, featuring poets Elizabeth Herron, Maya Kholsa, Jack Crimmins and Lucy Day, singer songwriters Hugh Shacklett, Brendan Smith, and others.



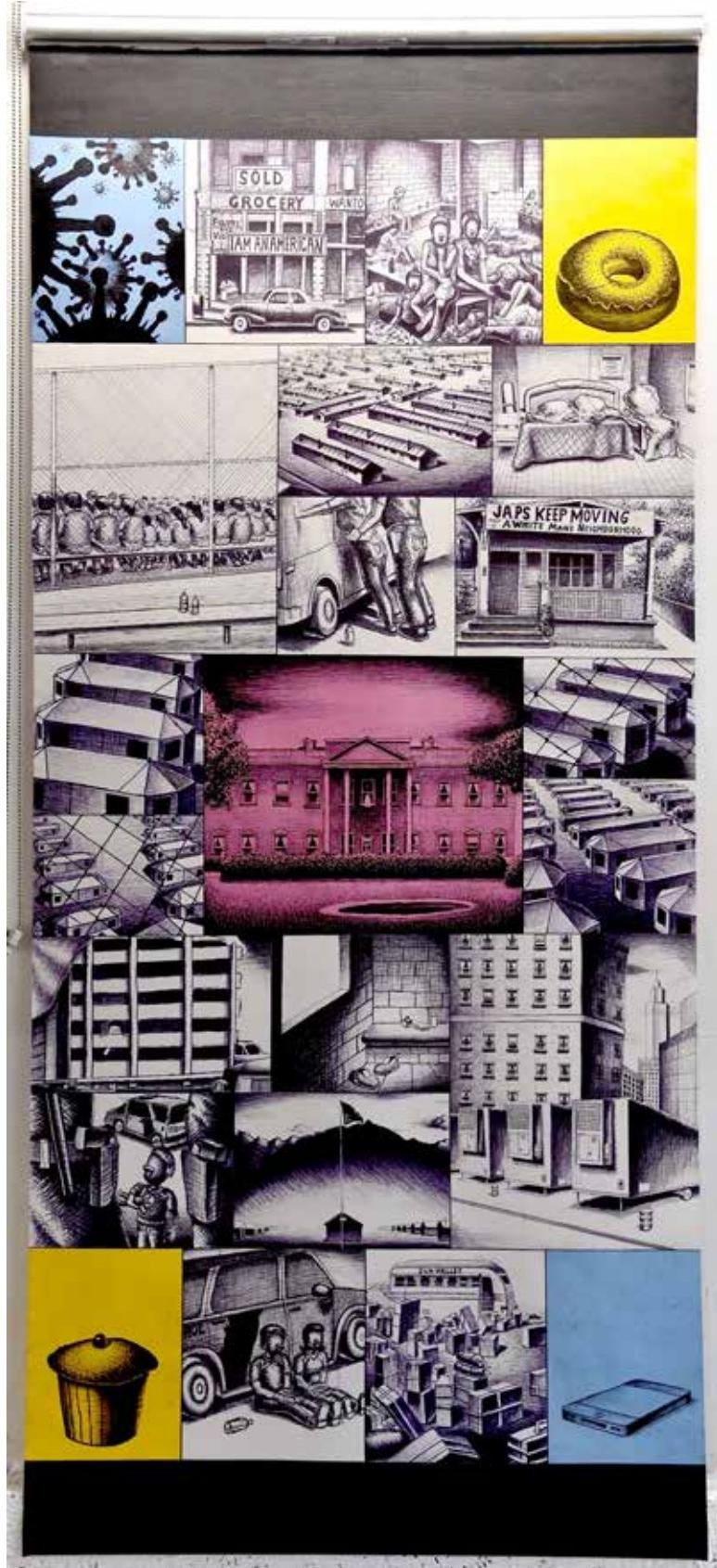
Bernadette Howard, *Deposit*, acrylic & pumice on fine cotton paper, 30 by 41 inches



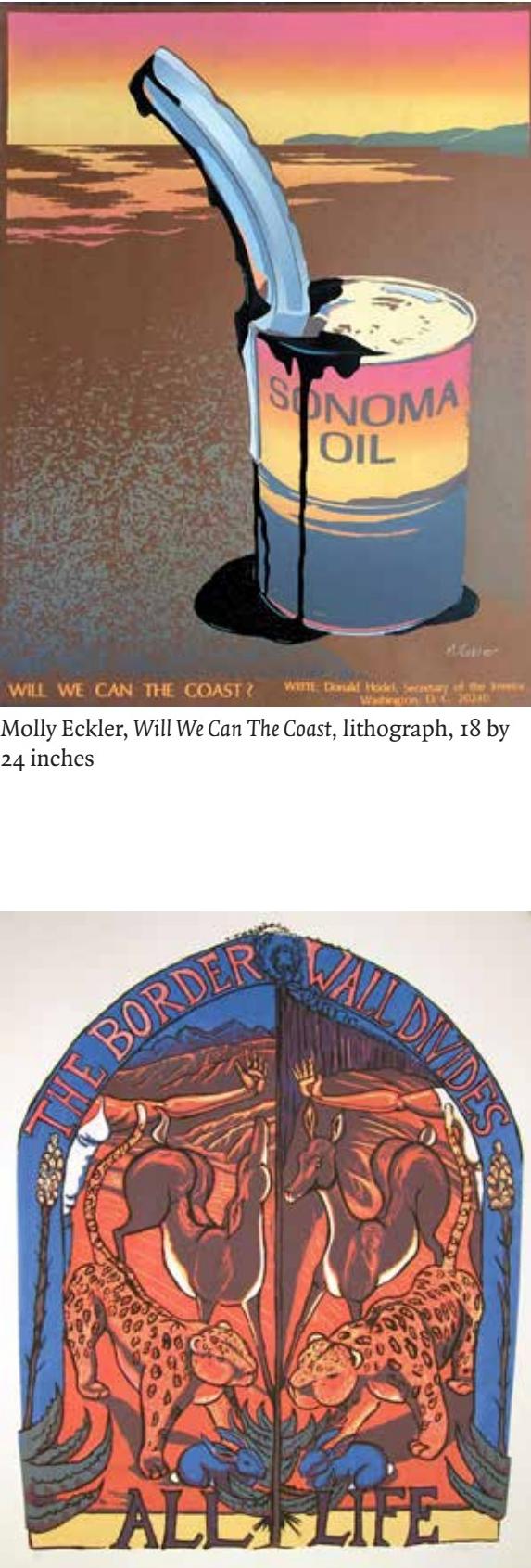
Bambi Waterman, *Reflection, Rhinoceros, Positive*, Chalk on Blackboard, 48 by 48 inches, Once Upon A Time There Were?



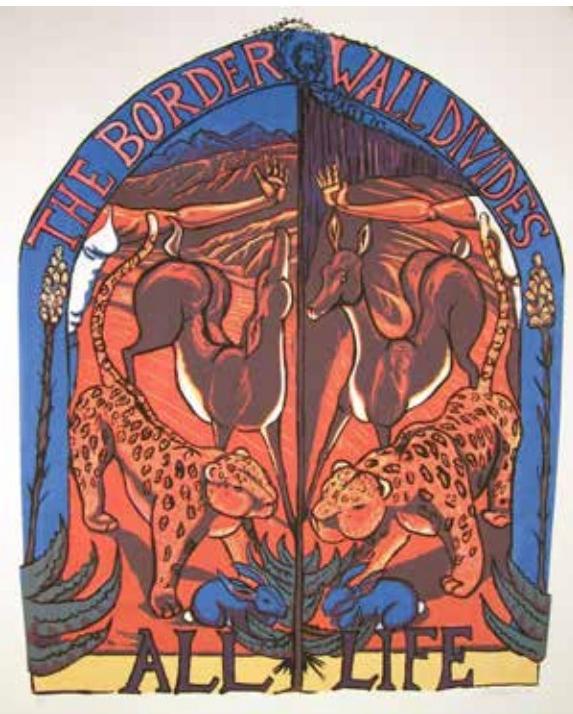
Jim Spitzer, *Your World Is All Fucked Up*, 2010, Acrylic on paper, 8 by 8 inches.



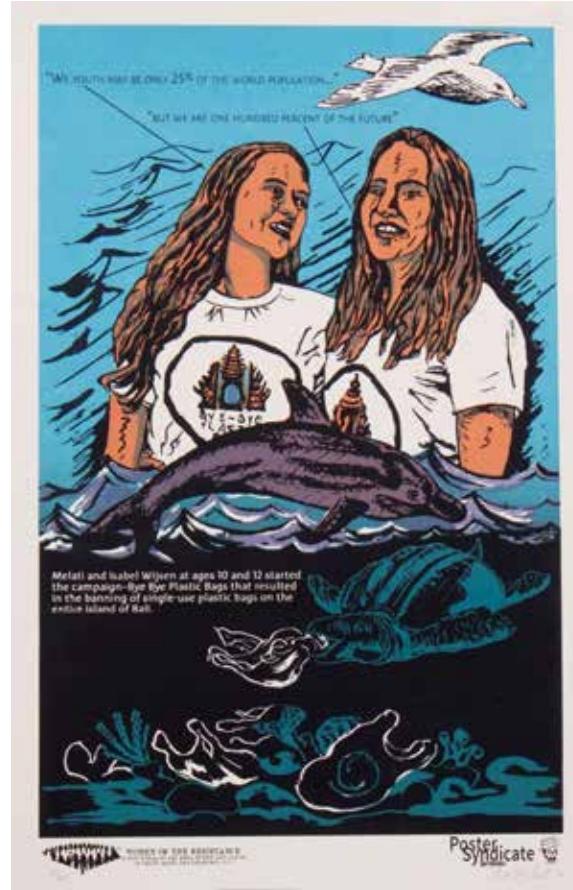
Evri Kwong, America, Land Of The Free and Home of the Brave, 2020, acrylic, sharpie permanent maker and micron pen on window shade, 89.5 by 39.5 inches



Molly Eckler, Will We Can The Coast, lithograph, 18 by 24 inches



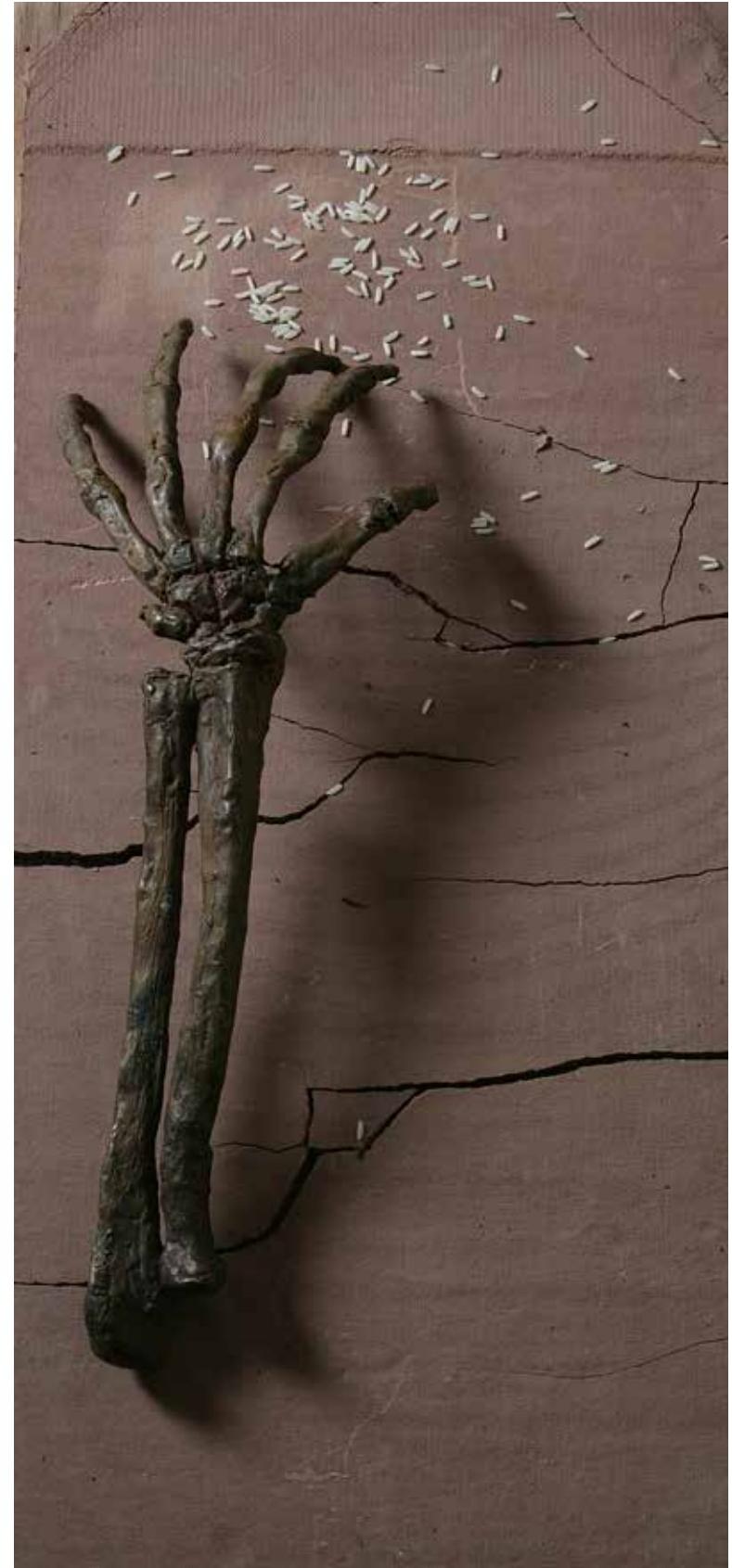
Art Hazelwood, The Border Wall Divides All Life, 2011, screenprint, 25 by 19 1/2 inches



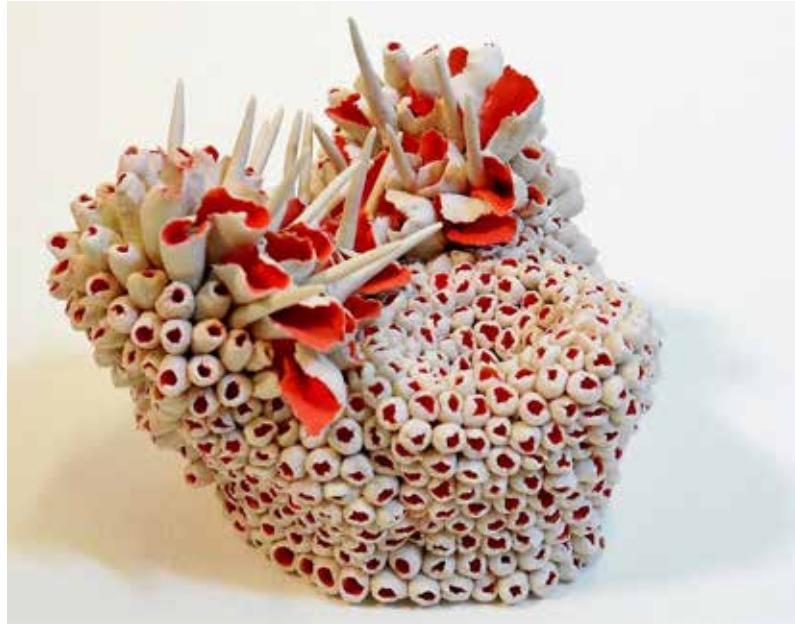
Art Hazelwood, Melati and Isabel Wijsen, Bye Bye Plastic Bags, 2018, screenprint, 19 by 12 inches



Molly Eckler, Earth Elephants, watercolor, gouache and airbrush painting, 14 by 16 inches



Catherine Daley, Desertification, 2014, bronze, clay, wood and rice, 4 inches high by 12 inches wide by 28 inches long



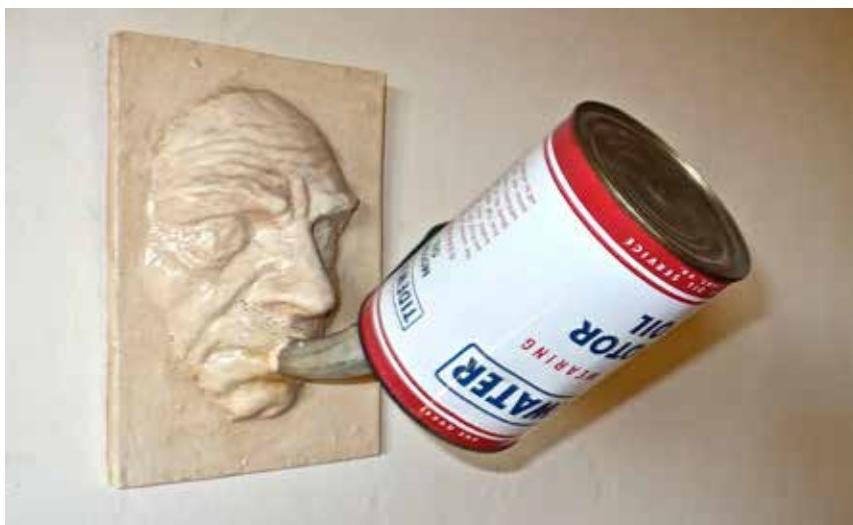
Bambi Waterman, *Coral Polyps* series, 2015–16, porcelain sculpture



Robin A. Dintiman, *Lost Innocence*, dried and crystallized rose bud, 4 by 2.5 by 3 inches



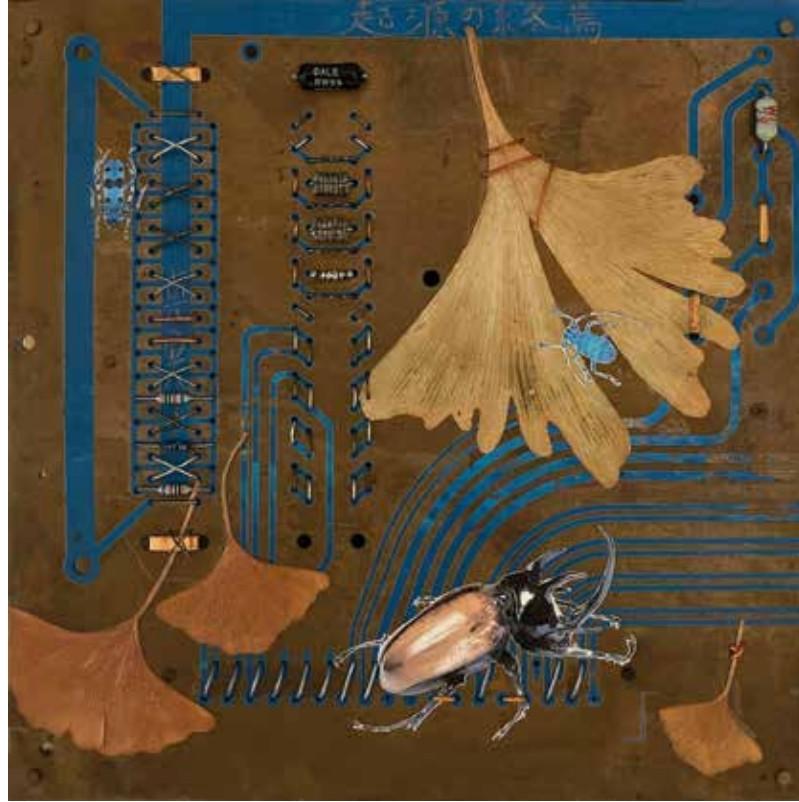
Art Hazelwood, *Parade of Global Warming Deniers*, 2012, woodcut & screenprint, 24 by 122 inches



Tyler James Hoare, *Tide Water*, 2005, oil can & plaster on wood, 12 inches by 12 inches by 16 inches



Emmanuel Catarino Montoya, *Homenaje a Leopoldo Mendez: Contra la Benediction del Poder Nuclear*, 1987, woodcut, edition of 50, 15 by 24 inches



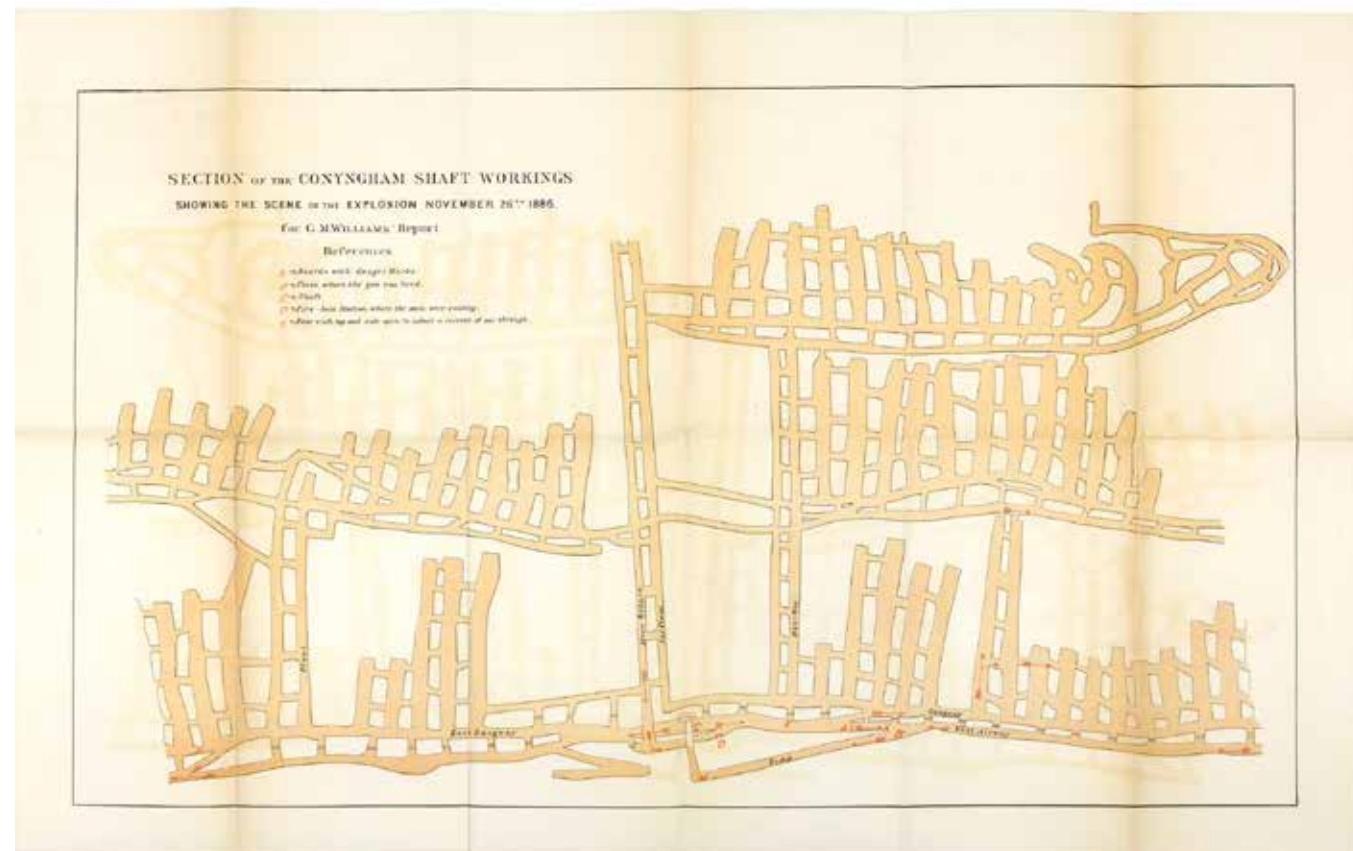
Iva Hladis, *Origins Extinct #26*, 2006, Mixed media on recycled wood, 7 by 7 inches



Holly Downing, *Vanishing IX: The Stag Beetle*, 3 by 3 inches, mezzotint



Mima Cataldo, *Historic Stornetta Dairy Headquarters, Sonoma County, CA (after the Tubbs Fire)*, 2017, archival pigment print, 8 by 14 inches



## LIBRARY COMPANY OF PHILADELPHIA

[WWW.LIBRARYCOMPANY.ORG](http://WWW.LIBRARYCOMPANY.ORG)

### COAL: TIME, MATERIAL AND IMMENSITY

May 3 – August 28, 2021

1314 Locust Street

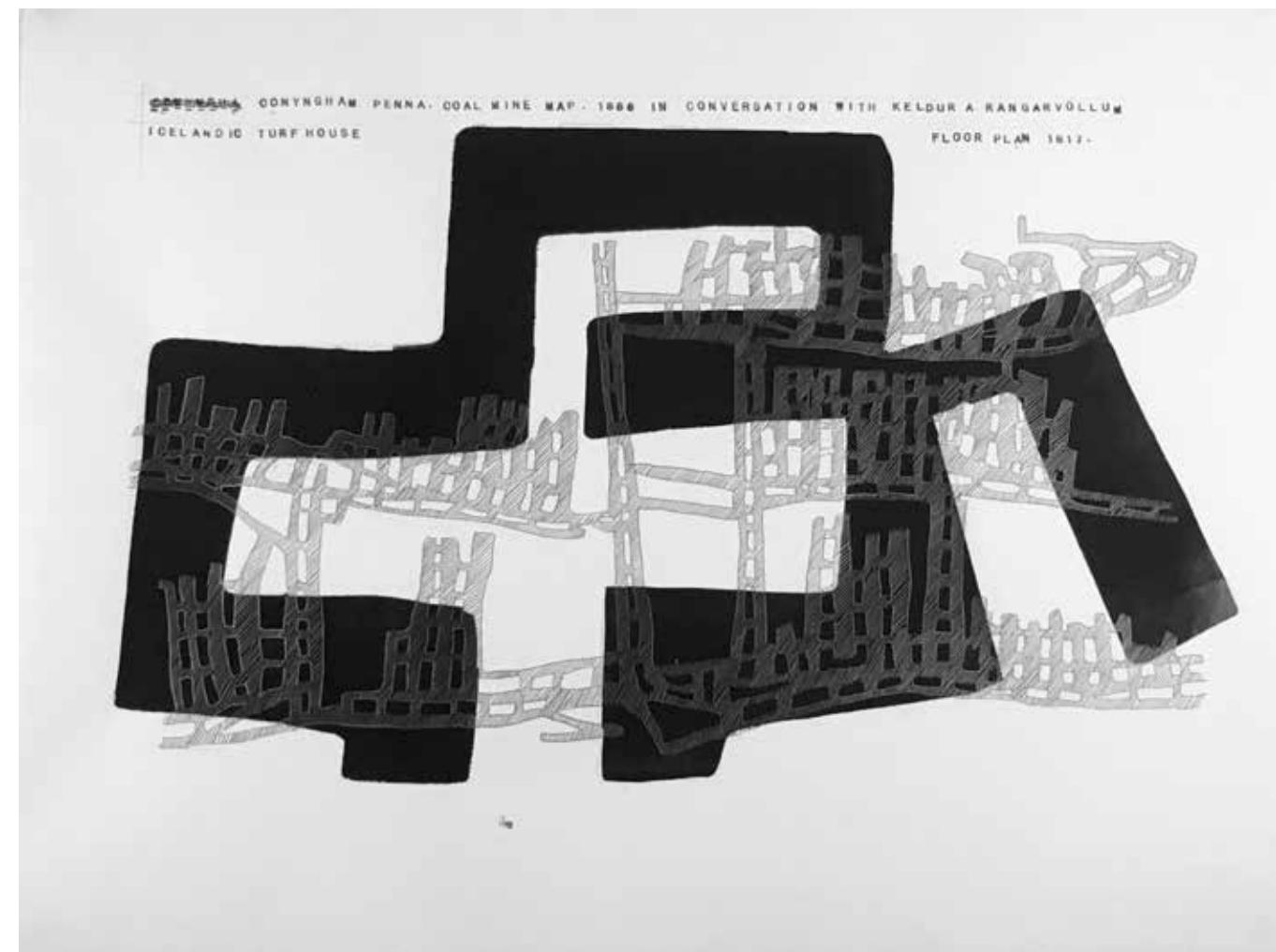
Philadelphia, PA 19107

An exhibition that explores coal's temporal, material and cultural presence. Part historical visual culture study, part creative material exploration, this exhibit helps us look beyond extraction to appreciate coal's fascinating materiality.

Two global-scale events are shaping life on Earth in profound ways: climate change and the COVID-19 pandemic. As we contemplate the immensity of these crises, we are faced with numbers and facts that are so large they challenge our ability to "get

our head around it." To confront these mind-bending threats requires that we think about scale. Understanding scales of time and material helps us gain perspective on what we are experiencing: a period of profound disruption and change, but one of many in a history that extends generations beyond and before self.

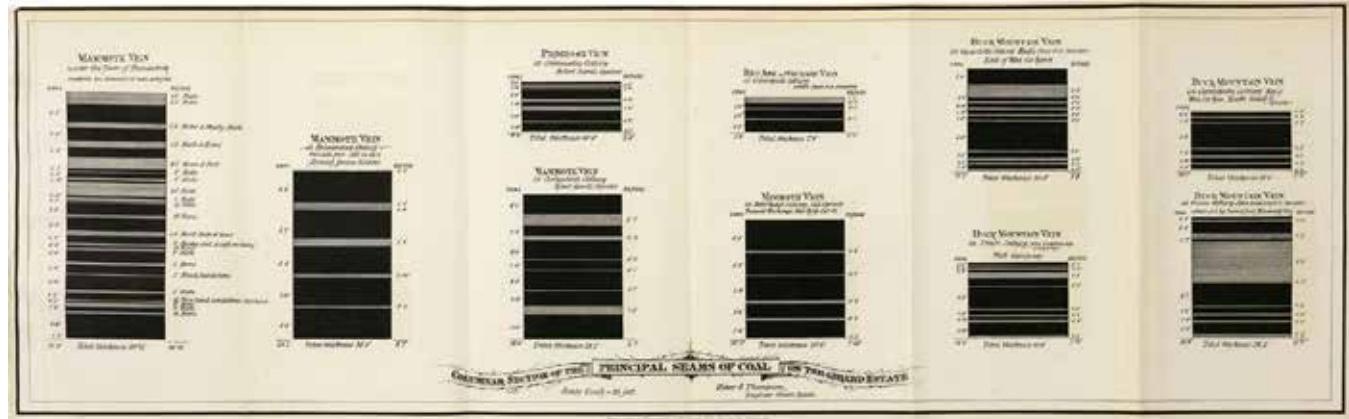
Thinking about coal helps us embrace immensity. Holding a piece of anthracite coal bridges a 300-million-year gap. Through coal we imaginatively leap across time and space to span geologic eras, epochs, and ages. Our species is at the same time small and large, fragile and powerful, depending on which framework of scale and context we have in mind. This conceptual trick, imagining extra-human scales, both micro and macro, helps us find our place and re-define our role within a complex planetary system: Nature. What the future of life on Earth will look like depends on our ability to co-exist within Nature's systems.



Facing page: From the Library Company of Philadelphia. Reports of the Inspector of Mines of the anthracite coal regions in Pennsylvania for the year 1886. Harrisburg, 1887. Section of the Conyngham shaft workings. Above: Andrea Krupp, 2020, 19 by 25 inches, Acrylic, graphite, stamped letters. Conyngham coal mine in conversation with Icelandic turf house.

Coal is one of Earth's most influential materials, and Pennsylvania anthracite coal is famous the world over as the purest, most carbon dense of all. A beautiful and fascinating material, it is sometimes called black diamond because its brilliant glassy surface flashes black and silver. It's easy to imagine coal as a precious rarity. But for the past two hundred years, though it seems like forever, coal has been the primary driver of industrial development, urbanization, and climate change. As we assess the environmental toll of burning fossil fuel and project into the future, the end of coal extraction is in view. It is time to shift perspective and imagine coal exerting its immense and benign influence—sequestering carbon underground into a far distant future.

Coal: Time, Material, and Immensity explores coal's temporal, material, and cultural presence. Part visual culture study, part creative and material exploration, this exhibit will look at coal in a new way. A selection of natural history books, geologic surveys, mine inspector's reports, and coal mining maps from the Library Company's collections will be displayed alongside contemporary artwork by Andrea Krupp. A visual artist, curator of this exhibit, and Conservator at the Library Company of Philadelphia, Krupp created works on paper, artist's books, and a vitrine installation as imaginative counterpoint to the nineteenth century documents. Her artwork uses soot and graphite, as well as grit and powders that she produced by hand from Pennsylvania an-



Top: From the Library Company of Philadelphia. Sixth annual report of the Board of Directors of city trusts... for the year 1875. Harrisburg, 1876. Columnar section of the principal seams of coal in the Girard Estate.

thracite coal. Material samples of coal, lignite, peat, and graphite will also be displayed.

#### About the artist:

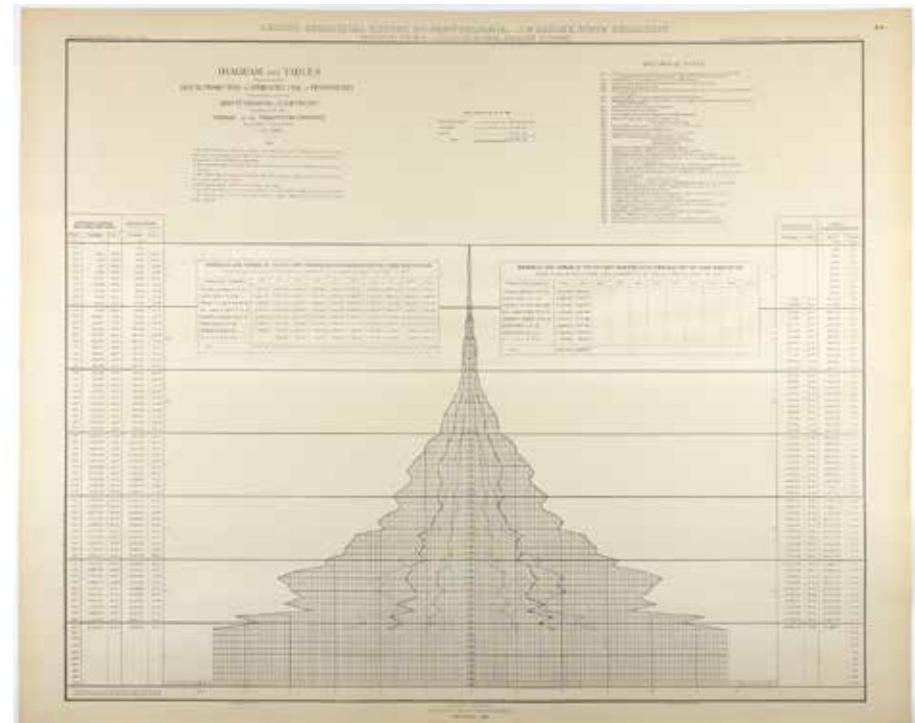
ANDREA KRUPP is a visual artist whose practice traces ongoing experiential, emotional, and intellectual engagement with nature. Her work as rare book Conservator brings expertise in visual and material culture, and historical grounding to her creative practice. She has a BFA in Printmaking from the University of the Arts. In 2017 she was an Independence Foundation Visual Arts Fellow. In 2018 she was a Ballinglen Arts Foundation Fellow, and an Arctic Circle Residency participant.

#### About the Library Company of Philadelphia:

Founded in 1731 by Benjamin Franklin, the Library Company of Philadelphia is America's oldest cultural institution. The Library Company is an independent research library with an extensive collection of rare books, manuscripts, broadsides, ephemera, prints, photographs, and works of art.



*The Library Company* OF PHILADELPHIA



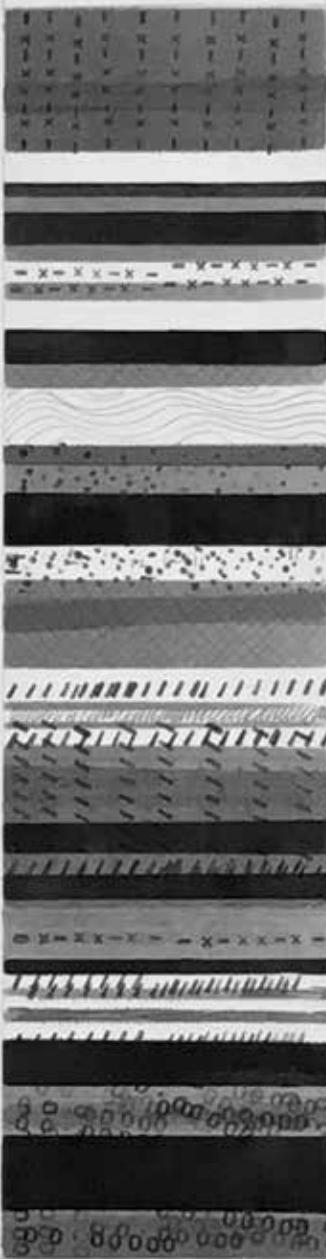
From the Library Company of Philadelphia. P. Lesley. Second Geological Survey of Pennsylvania - Anthracite Coal Fields Part I, Harrisburg, 1884. Diagram and tables showing the annual production of anthracite coal in Pennsylvania.

TO  
BECOME  
COAL

FIRST  
EXPIRE

LET GO  
OF ALL  
THAT  
IS NOT  
CARBON

WAIT  
300  
MILLION  
YEARS



Andrea Krupp, *To become coal*, 2020, 19 by 13 inches, Acrylic, graphite, stamped letters



Rachael Marne Jones, *Landmarks 1 & 2* (detail shot), 2019, porcelain, slip-cast granite rock & insulator fragment and Lichen Glazes

## RICHARD F. BRUSH GALLERY

[WWW.EXTRACTIONART.ORG/BRUSHGALLERY](http://WWW.EXTRACTIONART.ORG/BRUSHGALLERY)

Rachael Marne Jones and Ryan Keith Parker

Richard F. Brush Gallery, St. Lawrence University  
23 Romoda Drive, Canton, NY 13617  
August 15th – October 11th, 2021

Weaving together the archaeologic fragility of ceramic sculpture with the silent freeze of landscape photography, Rachael Marne Jones and Ryan Keith Parker examine humankind's ineffectual mark on the environment. Using the remains of intention to construct a path through the future, Parker and Jones explore quiet moments left in the wake of humankind's simultaneously ambitious and destructive drive to evolve. This exhibition will be at the Richard F. Brush Gallery at St. Lawrence Universi-

ty, August 15th – October 11th, 2021 in conjunction with Extraction: Art on the Edge of the Abyss intervention of 2021.

### RACHAEL MARNE JONES

Through empty pockets, the negative skins of life long past, we glean a glimpse of what once was, within fossil remains. What objects will tell our story?

The bits of modern detritus, geoteric landscapes, and anachronous technologies that reveal the vast discrepancies within a world where capitalism's breath is both hollow and colossal, tapping the pulse of every living being on this planet. Built up, and broken down, teetering on the edge of an existence so fragile that a silent wind seems to threaten what once felt rooted and stable beneath our outstretched palms.

Particles come from the earth, with long histories already embedded; once again broken down, reworked, and polished into something new—pass-



Ryan Keith Parker, *Cairn at Grinnell Glacier, MT (II)*, 2019, archival pigment print

ing through our hands, leaving our bodies, to return to the earth. How will these engineered reconstructions inherently alter the essence of their particles' cycles? What small epiphanies can be revealed from what we hold, build and break with our fingertips? And what of the oily prints we leave behind? Who will be the ones to piece together the stories of our negative skins, whispering in the wind?

### RYAN KEITH PARKER

It was just a pile of stone upon a mountain. Now we watch as the pebbles flow into the sea.

It is not without hope, that we gaze upon the piles of rubble. Rather, it is in indulgence of the irregular act of yearning for the land that was. As the

tide comes in to take away more asphalt and return bits of long-forgotten plastic to the shore, the exchange is a reminder of the breath of human-altered landscapes. There is no observable part of our world that does not wear a mark of humanity.

This series reflects upon that fact. It examines how the world was by considering what it will become. Each photograph is intended to be an explicative, meditating on the altered environment. A gust blowing seeds of milk weed inspires us to continue changing and adapting with our environment. As the sun sets over a lake which will soon dry up like the many rivers which no longer reach the sea, we know that change will bring something new, something to be revealed in the lakebed.



Rachael Marne Jones, Spines dispel to level valleys, 2019, porcelain, slip-cast granite rock & insulator fragment and Palladium glaze



Rachael Marne Jones, Spines dispel to level valleys (detail), 2019, porcelain, slip-cast granite rock, insulator fragment and Palladium glaze



Bailey Russel, Untitled From Violent Landscape Series, 2020, silver gelatin print



Léonie Pondevie, Kaolins, Manufacture du Paysage, 2019, inkjet print.



## LAND REPORT COLLECTIVE + FRIENDS

WWW.LANDREPORTCOLLECTIVE.COM

### EXTRACTION: AN EXPANSIVE SURVEY OF LAND USE THROUGH THE LENS OF CONSUMPTION

Hosted by the University of Wyoming Department of Visual Arts, June 1st – September 3rd, 2021

As a participant of Extraction: Art On The Edge of The Abyss, the Visual Arts Main Gallery will explore this concept though the lens of land use. What can our observations of the landscape tell us about our priorities as a society, and can this make us better informed about how we navigate our future? This exhibition looks to explore the theme of extraction, not only through the industrialized landscape, but also the broader human presence seen within the landscape. Conceptually, the human presence ties back to extractive industries based on the premise that much of the manmade seen in the landscape would not even be possible without extractive industries. Gravel pits, limestone mines, oil fields, dams, wind

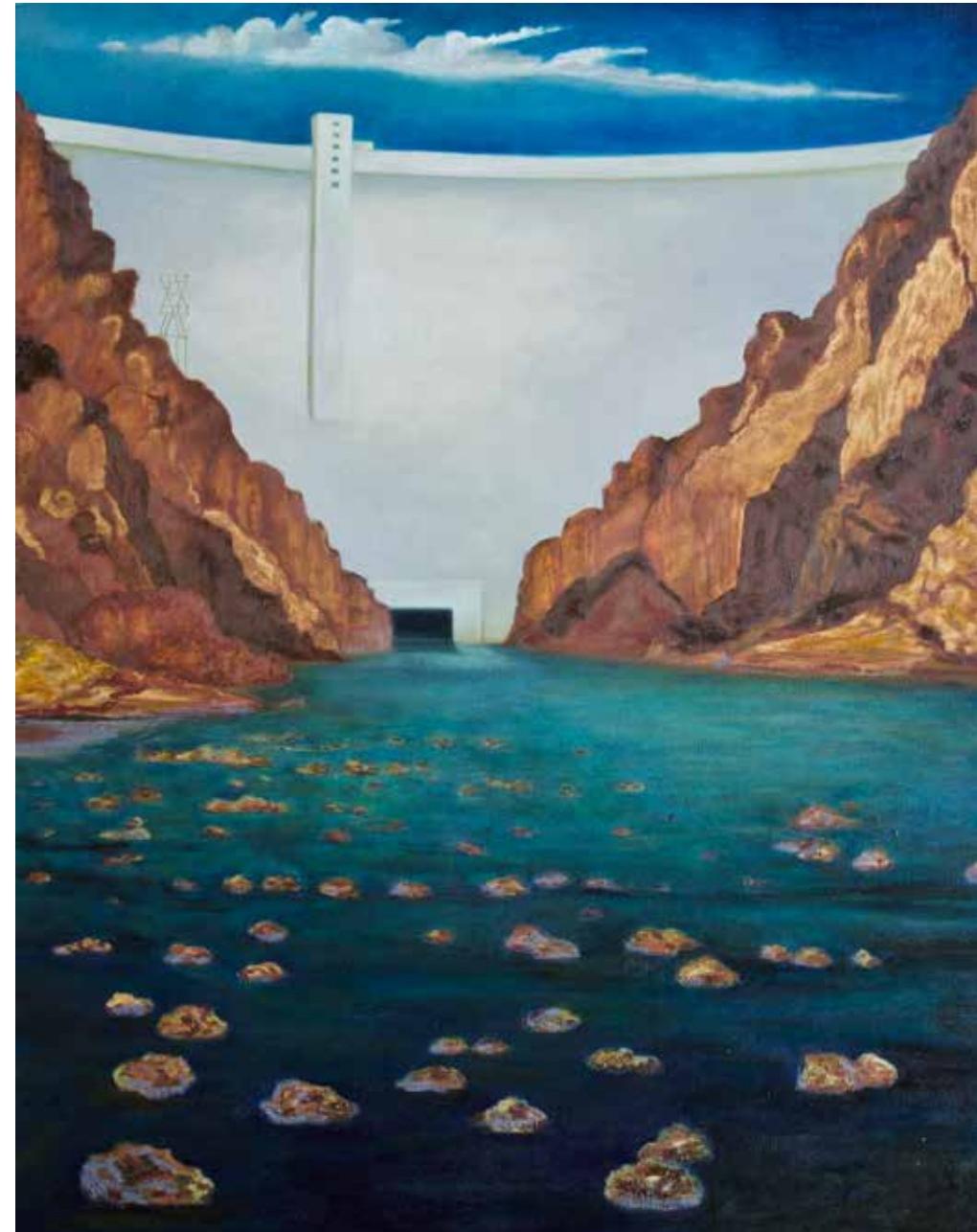
farms, clear cuts, etc. are all part of what have made for modern society to exist as we know it. Therefore, as we look to our future in the Anthropocene where the effects of climate change are being felt, where is it that we hope to be? What can the landscape and our surroundings tell us about what we have gotten wrong and what can we do to make things better as we look to the future?

—David Jones

LRC member and exhibition organizer,  
Instructional Art Technician,  
University of Wyoming Department of Visual Art

#### PARTICIPATING ARTISTS:

- Patrick Kikut, Laramie, WY
- Jason Brown, Knoxville, TN
- Greg Pond, Sewanee, TN
- Leticia Bajuyo, Corpus Christi, TX
- Nina Elder, Santa Fe, NM
- Shelby Shadwell, Laramie, WY
- David Jones, Laramie, WY
- Bailey Russel, Laramie, WY
- Léonie Pondevie, Lorient, Brittany Region, France
- Brian Jobe, Nashville, TN



Patrick A. Kikut, Flaming Gorge Dam—Green River, 2020, oil on canvas

## EXTRACTION

### RESPONSE TO THE CHANGING WORLD ENVIRONMENT

WWW.EXTRACTIONART.ORG/CSP

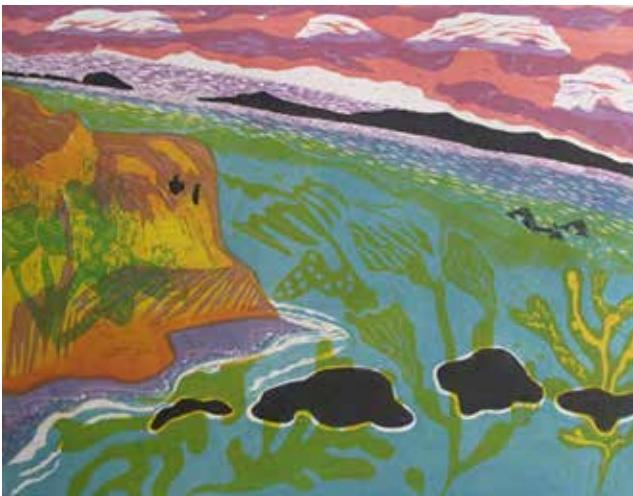
California Society of Printmakers

THE CALIFORNIA SOCIETY OF PRINTMAKERS is pleased to announce a multi-venue exhibition to take place conjointly at Gallery Route One in Point Reyes, CA and the Sanchez Art Center in Pacifica, CA next summer from April through August 2021. Both galleries align with and promote our mission to provide a space for artists exploring new directions in contemporary print methods. We are also proud to report that Dana Harris Seeger, an award winning local printmaker and co-founder of the School of Visual Philosophy, has agreed to serve as juror.

Believing artists can be messengers and have purpose through recording world events, we are inspired to create these two forums for us to show our expression through various printmaking techniques. Many of our members currently work on environmentally conscious subjects in their practice and now even more are feeling called by recent challenging events to join the conversation. This exhibition will allow us a platform to artistically communicate concerns about the future of our changing world environment.

"The Exxon Valdez oil spill in 1989 triggered our fledgling art organization to start a yearly series of exhibitions focused on threats to the environment, both global and local. Since the summer of 1989, Gallery Route One has committed to exhibiting artists whose work examines environmental issues in three exhibitions yearly. We have also organized workshops, panel talks and multi-venue events connected to these environmentally focused exhibitions."

—Gallery Route One, Zea Morvitz and Mary Mountcastle Eubank, Co-Directors, assisted by Betsy Kellas.



Sara Woodburn, Channel Islands, woodcut

"With an interest in bringing home the connection between the world's changing climate, stemming from the extraction and burning of fossil fuels, to the escalating need for the community to address the impacts including sea level rise, Sanchez Art Center is thrilled to collaborate with the California Society of Printmakers on an exhibition for Extraction: Art on the Edge of the Abyss."

—Sanchez Art Center, Cindy Abbott, Director, assisted by Janet Barker.

Jami Taback, President, California Society of Printmakers, Press Release, 2020, with Karen Gallagher Iverson, Cynthia Rand Thompson, Ashley Rodriguez Reed.



Jami Taback, Separation Anxiety 3, collagraph



Standby Snow, *Chronicles of a Heatwave, Chapter One* at Story Mill Grain Terminal, 2019, Comma-Q Media

## MOUNTAIN TIME ARTS

WWW.MOUNTAINTIMEARTS.ORG

Mountain Time Arts is a nonprofit organization based in Bozeman, Montana. We produce inventive, place-based public art projects to enliven our relationship to people and place. MTA is committed to social and environmental justice. Our artworks call attention to indigenous voice, climate action, and the people and resources integral to this region. We understand collaborative and inclusive inquiry as a means to generate new knowledge and work toward solutions for all. We exist thanks to community support.

"As a guide for Gabriel Canal in 2017, I was able to give an Indigenous perspective on farming and irrigation. Much of the time, the Native voice isn't present nor heard. Being part of Gabriel Canal alongside ranchers and farmers taught me that they often feel left out of the conversation, too."

—Francesca Pine Rodriguez, Apsálooke/Crow & Tsitsistas/Northern Cheyenne, Guide for the performance of Gabriel Canal, 2017.

"Our role as artists and activists is to challenge our community and youngsters to think in an ancient way, but also a brand-new way, about how to celebrate and cherish water, by creating ceremonies and ways of interacting with water that include all people."

—Dr. Shane Doyle, Ed.D., Apsálooke/Crow, scholar, professor, and advisor for MTA.

# SEBASTOPOL CENTER FOR THE ARTS

EXPLORE • ENGAGE • CONNECT

282 S. High Street  
Sebastopol, CA  
95472

(707) 829-4797  
[Info@SebArts.org](mailto:Info@SebArts.org)

Sebastopol Center for the Arts (SCA) pledges its responsibility to the community by dedicating the entire 2021 exhibition program to the topics of the environment and climate change. In memory of Edwin Dobbs and honoring his vision, we are proudly participating in the "Extraction" movement, giving voice to all artists ready to create a ruckus.

All national and international artists: visual artists, poets, musicians and dancers with the courage to reflect and expose the disastrous effects of climate change on our Earth and its resources are invited.

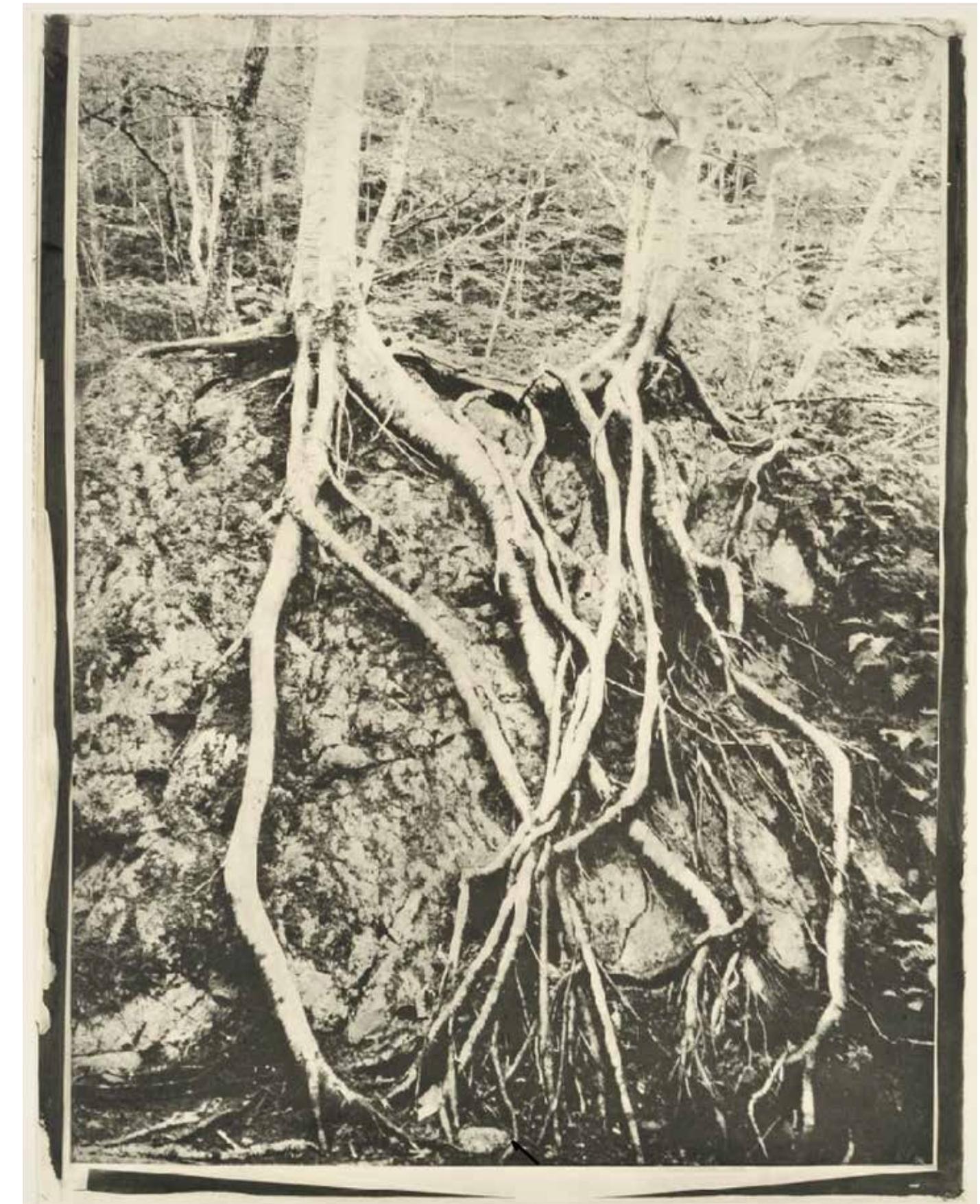
Closer to 2021, we will post on the [SebArts.org](http://SebArts.org) website, details for application to engage in parts of this year long event.

We invite speakers, specialists in their field, to come and join the discussion or debate diverse topics of climate challenges and possible messages of hope.

Every opportunity to collaborate with other art-related community organizations, as well as with schools will be accepted and strongly encouraged.

If trees can communicate and display solidarity, so we believe that each individual can participate, collaborate, pledge and bring forward movement for change. SCA wants to grow in our community a sense of loving responsibility for future generations by creative awareness thru the arts.

Catherine Devriese – Creative Director  
282 S. High Street, Sebastopol, CA  
[SebArts.org](http://SebArts.org)



Robin A. Dintiman, *Nature's Will; Will to Live*, photogravure, drawing, 24 by 30 inches

# CALL FOR ENTRIES

Sebastopol Center for the Arts (SCA) is a dynamic, community, non-profit arts organization, committed to cultivating creativity and inspiration. Since its inception in 1988, SCA has grown to be one of the most vibrant arts organizations in Northern California. It has been a destination for artists and arts enthusiasts, dedicated to offering high-quality arts programming and serving as a platform for local, regional, national and international artists: visual artists, performers, filmmakers, poets and writers. Find below the gallery schedule, which is a guideline to the year programming. We invite you to check the SebArts.org website and sign up for future alerts for the latest events and applications.

## "Ecstasy: Breathtaking Beauty of Nature"

January 9 – February 14

In this international, juried exhibition we ask you to share your vision on the magnificent and inspiring beauty of Mother Earth. Show what your artistic, wondrous mind sees in nature, from macro to microscopic. *Deadline for submissions: 12/1/2020*

## "Recycling"

February 20 – March 28

International, juried exhibition showcasing art crafted from cast-off, discarded and re-purposed materials. This is a celebration of artistic ingenuity and imagination and the importance of conserving our limited natural resources. Join the upcycling art movement ... recreate, reinvent, repurpose. *Deadline for submissions: 1/27, 2021*

## Favorite Things: "TREES"

April 3 – May 9

The theme for our yearly non-juried exhibition "Favorite Things" is TREES. We are looking for all interpretations from tree-loving artists.. *Deadline for submissions: 2/22, 2021*

## "Black/White and Shades of Gray"

June 19 – July 25

This juried exhibition showcases work in the powerful and creative contrast of black and white tones and, or includes complex and subtle shades of gray. *Deadline for submissions: 5/3, 2021*

## "FIBER ARTS X"

Juy 31 – September 12

Our famous Bi-Annual International Fiber Art juried exhibition is once again inviting artists, designers, and creatives from all over the world to enter this celebration of Fiber Arts. This Sebastopol Center for the Arts exhibition is co-sponsored by the Surface Design Association. Jurors are: Carol Beadle, fiber artist and teacher, Melissa Levenson, curator and specialist in textiles and costume, and Tom Grotta, photographer, and gallery owner. *Deadline for submissions: 6/7, 2021*

## "EXTRACTION, Art on the Edge of the Abyss"

October 23 – November 28

This is a call for most eccentric, outrageous work. We invite work that is pushing boundaries. When nature's true forces get unleashed there is no hiding: tornadoes, heatwaves, rain deluges, fires, floods, earthquakes... What is the value of human intervention when we think of atomic warfare, depletion, extinction, poisoning, pollution, virtual omnipotence, data extraction, big brother control...? Let your brain, your guts, your heart speak through your deepest artistic expression. Be bold and go beyond your personal safety and boundaries. Bring your work on The Edge of the Abyss! Curators are: Robin Dintiman, Holly Downing, Catherine Devriese. *Deadline for submissions: 8/8, 2021*

## CHURCHILL ARTS COUNCIL

[WWW.CURCHILLARTS.ORG](http://WWW.CURCHILLARTS.ORG)

## MISSION STATEMENT

The Churchill Arts Council (CAC) is dedicated to enriching the cultural and social life of our community and region by providing educational and experiential opportunities in the arts on a variety of levels including a performing arts series; visual art exhibitions; film programs; and literary readings, lectures, talks and conversations with contemporary artists. Through innovative programming, CAC serves as a cultural resource for the region by providing vision, leadership, information, support, education and enjoyment of a diversity of art experiences.

## BRIEF HISTORY

### ARTISTIC EXCELLENCE

CAC was founded in 1986 and began conducting artists' residencies and presenting performing arts events that same year. Over the last three-plus decades our programming has grown to become an ongoing forum for the exploration of a wide range of creative ideas including: an annual performing arts series; visual art exhibitions; literary readings and conversations with artists in all disciplines; screenings of classic and foreign films; a juried local artists' exhibition; scholarships to pursue studies in the arts; publication of print and online visual arts catalogs as well as a monthly newsletter and other educational-informational materials. We also actively participate in a number of organizations dedicated to enhancing the development of the arts statewide. Funding for CAC programs and activities has been received from a diverse range of public and private sources including the Andy Warhol Foundation, National Endowment for the Arts, the Nevada Arts Council, the Nevada Commission on Tourism, the Western States Arts Federation, the City of Fallon, Churchill County, and many private foundations, local businesses, and individuals.

## OATS PARK ART CENTER

Efforts to provide a permanent home for CAC's programs began with a series of community and regional meetings in 1989 which identified the historic Oats Park School building in Fallon as a potential candidate to house a multi-discipline community arts center. The structure was nominated to the State and National Registers of Historic Places in 1990 and a Feasibility / Concept Study was commissioned and completed in 1992. The Study was extremely positive about returning the building to community use and—thanks to the funding from the National Endowment for the Arts, Arts Facilities Design Program—a Design Development report was completed in 1993. Construction documents for the entire art center were completed and construction and renovation began in 1996. In July, 1999, Oats Park was designated as an Official Project of Save America's Treasures—a public-private partnership of the White House Millennium Council and the National Trust for Historic Preservation. As such, Oats Park joined a very select group of historic resources that have been chosen to represent America's treasures in need of support for their preservation and renovation. To proceed in the most cost effective manner and to accommodate available funding, construction and renovation has been implemented in a series of dovetailing and/or overlapping phases. The theatre opened in 2003, visual art galleries in 2006, and the final portions, including a café and catering kitchen was completed in 2016. To date, over \$7.5 million has been raised and expended on the renovation.

The Churchill Arts Council is committed to holding an exhibition in connection with Extraction: Art on the Edge of the Abyss in 2022.



The studio and gallery of Peter Rutledge Koch and the home of the CODEX Foundation

## THE CODEX FOUNDATION GALLERY

[WWW.CODEXFOUNDATION.ORG](http://WWW.CODEXFOUNDATION.ORG)

All throughout 2021 the studio space and gallery of Peter Koch, Printers and the CODEX Foundation—the birthplace of the Extraction Project—will be open to viewers by appointment. To make an appointment please email [contact@codexfoundation.org](mailto:contact@codexfoundation.org).

On display will be the extraction-related book works of Peter Koch, including *Nature Morte*, *Liber Ignis* and *UR-TEXT, Volume II: Speculum Mundi*. The exhibition will also feature the WORDS on the Edge broadside portfolio of printers and poets.

The CODEX Foundation exists to preserve and promote the contemporary hand-made book as a work of art in the broadest possible context and to bring to public recognition the artists, the craftsmanship, and the rich history of the civilization of the book.



The original “Extraction Map” in Peter Koch’s studio, with recruited participants represented as pins



The studio and gallery of Peter Rutledge Koch and the home of the CODEX Foundation; Next page: Two-page spread from *UR-TEXT, Volume II: Speculum Mundi*

# incipit Ecclesiastes

EMPTINESS, EMPTINESS, EMPTINESS  
all is empty. What does a man gain from all  
his labour and his toil here under the sun?  
Generations come and generations go, while  
the earth endures for ever. The sun rises and  
the sun goes down; back it returns to its place



and rises there again. The wind blows south,  
the wind blows north, round and round it  
goes and returns full circle. All streams run  
to the sea, yet the sea never rises; back to  
the place from which the streams ran they  
return to run again. All things are wearisome;  
no man can speak of them all. Is not the eye  
gorged with seeing, and the ear benumbed  
with hearing? What has happened will happen  
again, and what will be done will be done  
again, and there is nothing new under the sun.

displacement of the body by the air pressure wave. A number of cases  
of ruptured eardrums were reported among the survivors in Hiroshima  
and Nagasaki, but the incidence was not high even for those who were  
fairly close to ground zero. Within a circle of 0.31 mile (1,640 feet)  
radius about 9 percent of a group of 44 survivors in Nagasaki had  
ruptured eardrums, as also did some 8 percent of 125 survivors in the  
ring from 0.31 to 0.62 miles from ground zero. In Hiroshima the

Abram per visionem dicens: Noli timere, Abram: ego protector tuus sum, et merces tua magna nimis. Dixitque Abram: Domine Deus, quid das mihi: ego vadam absque liberis, et filius procuratoris domus meae iste Damacus Eliezer. Addiditque Abram: Mibi autem non dedisti semen, et eccles vernacularis meus, haecres meus erit. Statimque sermo Domini factus est ad eum, dicens: Non erit hic haeres tuus, sed qui egredietur de utero tuo, ipsum habebitis haeredem. Eduxitque cum foras, et ait illi: Suscipe caelum, et numera stellas, si potes. Et dixit ei: Sic erit semen tuum. Credidit Abram Deo, et reputatum est illi ad justitiam. Dixitque ad eum: Ego Dominus qui eduxi te de Ur Chaldaeorum ut darem tibi terram istam, et possideres eam. At ille ait: Domine Deus, unde scire possum quod possessurus sim eam? Et respondens Dominus: Sume, inquit, mihi vaccam tricentum, et capram tricentam, et arictem annorum trium, turturem quoque et columbam. Qui tollens universa hacc, divisit ea per medium, et utrasque partes contra se altrinsecus posuit; aves autem non divisi. Descenderuntque volucres super cadavera, et abigebat eas Abram. Cumque sol occumberet, sepor irruit super Abram, et horror magnus et tenebrosus invasit



videns quod conceperit, despiciui me habet: judicet Dominus inter me et te. Cui respondens Abram: Ecce, ait, ancilla tua in manu tua est, utere ea ut libet. Affligente igitur eam Sarai, fugam init. Cumque inventisset eam angelus Domini iuxta fontem aquae in solitudine, qui est in via Sur in deserto, dixit ad illam: Agar ancilla Sarai, unde venis? et quo vadis? Quae respondit: A facie Sarai dominac meae ego fugio. Dixitque ei angelus Domini: Revertere ad dominam tuam, et humiliare sub manu illius. Et rursum: Multiplicans, inquit, multiplicabo semen tuum, et non numerabitur praec multitudo. As deinceps: Ecce, ait, conceperisti, et paries filium: vocabisque nomen ejus Ismael, eo quod audierit Dominus afflictionem tuam. Hic erit ferus homo: manus ejus contra omnes, et manus omnium contra eum: et e regione universorum fratrum suorum fugiet tabernacula. Vocavit autem nomen Domini qui loquebat ad eam: Tu Deus qui vidisti me. Dicit enim: Profecto hi vidi posteriora videntis me. Propterea appellavit puerum illum Puteum viventis et videntis me. Ipse est inter Cades et Barad. Deperire Agar Abram filium: qui vocavit nomen ejus Ismael. Octoginta et sex annorum erat Abram quando peperit ei Agar Ismaelem. ¶ Postquam vero nonaginta et novem annorum esset cooperat, apparuit ei Dominus, dixitque ad eum: Ego Deus omnipotens: ambula coram me, et esto perfectus. Donamque foedus meum inter me et te, et multiplicabo te vehementer nimis. Cecidit Abram pronus in faciem. Dixitque ei Deus: Ego sum, et pactum meum tecum, crisque pater multarum gentium. Nec ultra vocabitur nomen tuum Abram, sed appellaberis Abraham: quia patrem multarum gentium constitui te. Faciamque te crescere vehementissime, et ponam te in gentibus, regesque ex te egrediuntur. Et statuimus pactum meum inter me et te, et inter semen tuum post te in generationibus suis, foedre semper pitero: ut sim Deus tuus, et seminis tui post te. Daboque tibi et semini tuo terram peregrinationis tuae, omnem terram Chanaan in possessionem aeternam, eroge Deus eorum. Dicit iterum Deus ad Abraham: Et tu ergo custodies pactum meum, et semen tuum post te in generationibus suis. Hoc est pactum meum quod observabitur inter me et vos, et semen tuum post te circumcidetur ex vobis omne masculinum: et circumcidetur carnem praeputii vestri, ut sit in signum foederis inter me et vos. Infans octo dierum circumcidetur in vobis, omne masculinum in generationibus vestris: tam vernacularis, quam emptitus circumcidetur, et quicumque non fuerit de stirpe vestra: critique pactum meum in carne vestra in foedus aeternum. Masculus, tuus praeputii caro circumcisus non fuerit, delebitur anima illa de populo suo: quia pactum meum irritum fecit. Dicit quoque Deus ad Abraham:

depends on the rate of increase of the pressure at the blast wave front. For wave fronts with sufficiently slow pressure rise, the increase in internal pressure due to inward movement of the body wall and air flow in the lungs keeps pace (to some extent) with the external pressure. Consequently, quite **high incident overpressures** are tolerable. In contrast, if the rise time is short, as it is in nuclear explosions under appropriate terrain and burst conditions, the

ceiling, floor, and walls as well as to the incident wave entering the structure. Since the reflected waves would reach him at different times, the result would be a step loading, although the rise time for each step might be quite short. In such cases, where the initial blast pressure is tolerable and the subsequent pressure increase is not too great or occurs in stages (or slowly), a certain peak overpressure is much less hazardous than if it were applied in a single sharp pulse. Apparently



## EXTRACTION ART

SELECTED IMAGES, ESSAYS AND POETRY

*“The greatest emergency is the absence of emergency, that is, the status quo, the normalization of disaster.”*

—Santiago Zabala

Left: Ilka Hartmann  
Grebe Victim of the San Francisco Oil Spill, January 18, 1971  
photograph, © Ilka Hartmann 2019



Chuck Forsman, Saskatchewan, Bakken Area, 2019, photograph



Chuck Forsman, Bonneville Salt Flats, UT, 2017, photograph



Chuck Forsman, Logging Debris, South Africa, 2019, photograph



Chuck Forsman, Gilsonite Trench, Northeast UT, 2019, photograph



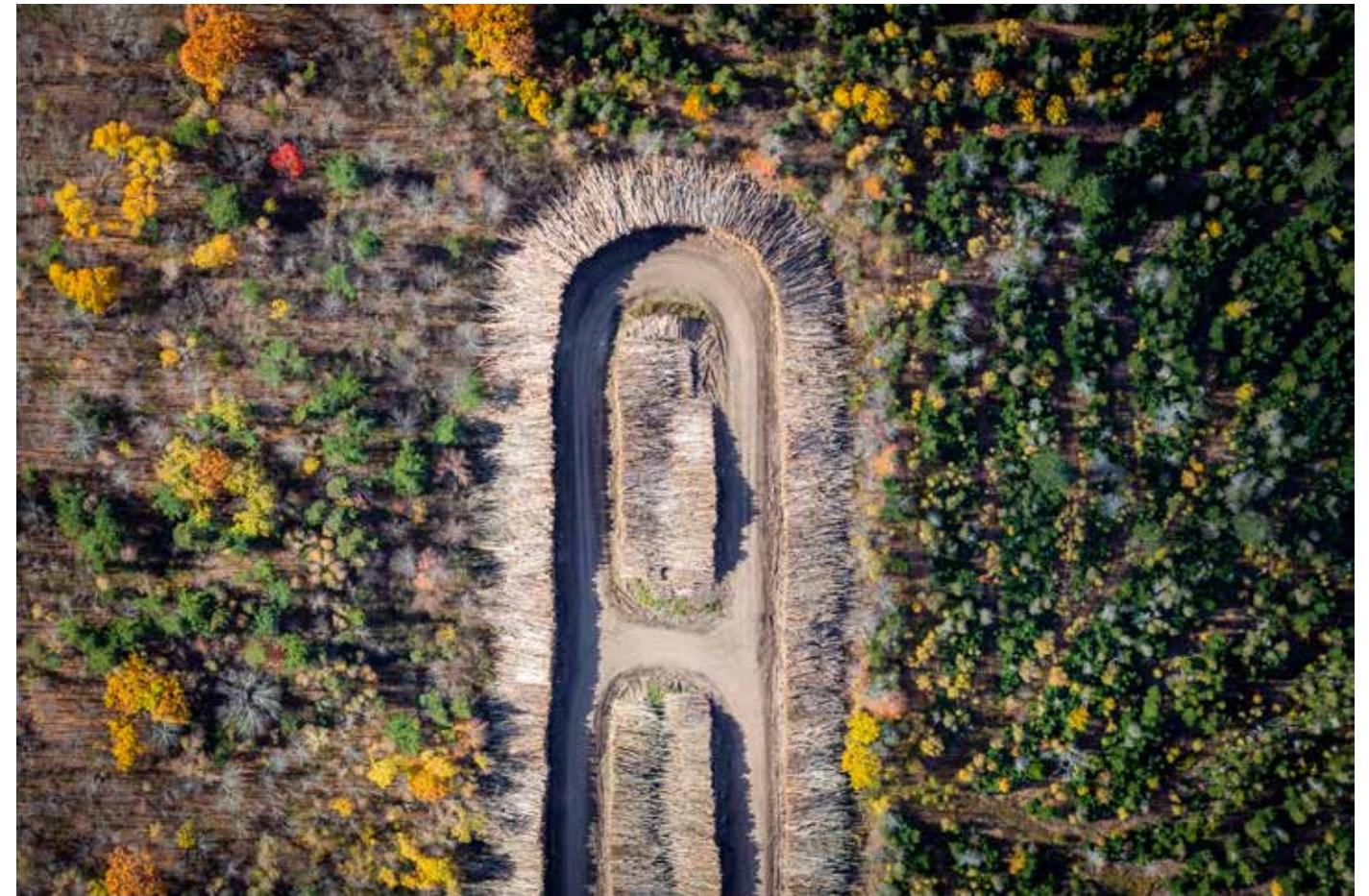
Chuck Forsman, North Dakota Fracking Pond, 2019, photograph



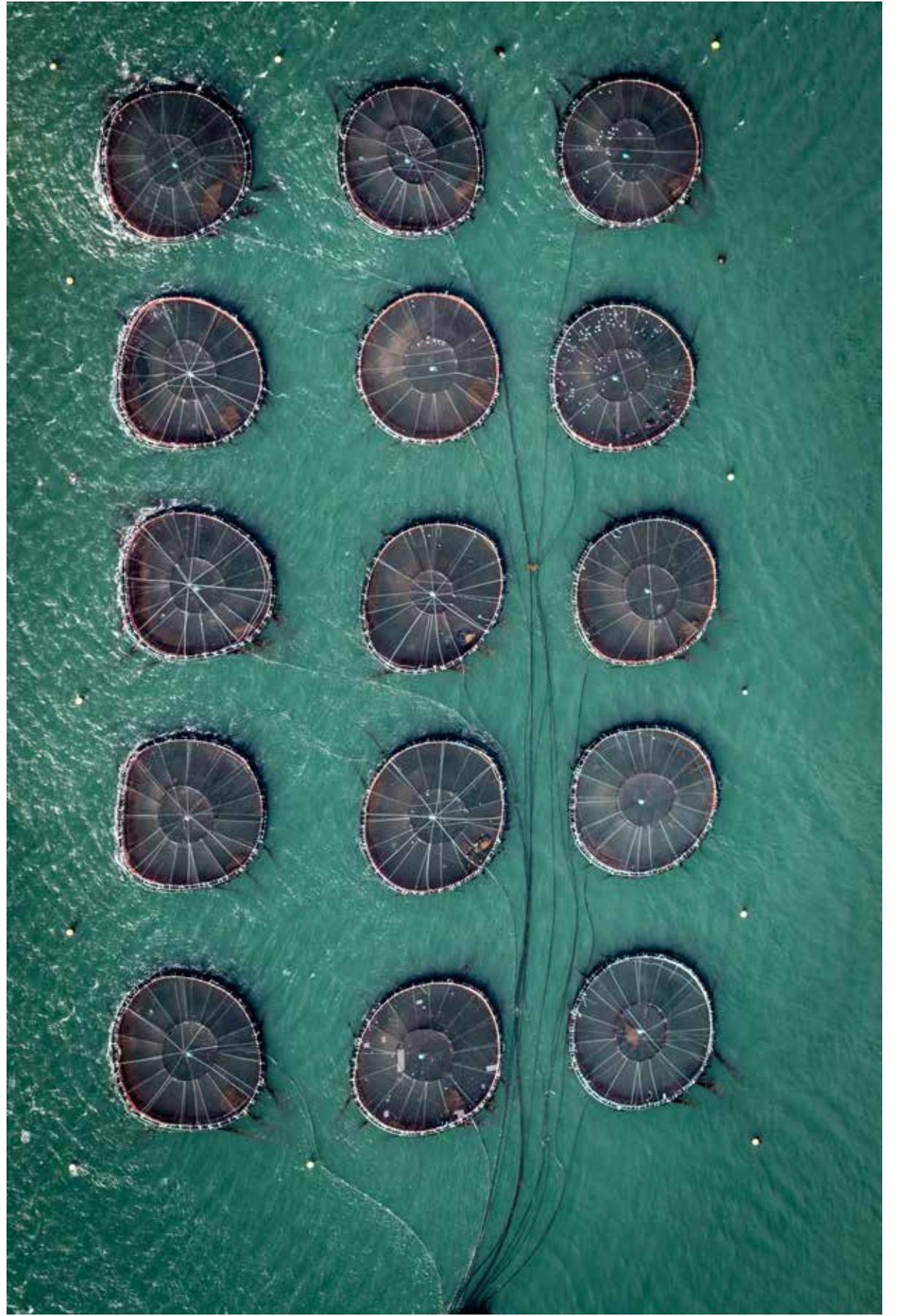
Chuck Forsman, Moroccan Pit Mine, 2019, photograph



Chris Boyer, Prairie Pothole Junkyard, Eden, South Dakota ( $45.580135^\circ$ ,  $-97.420159^\circ$ )



Chris Boyer, Pulpwood, Baileyville, Maine ( $45.162863^\circ$ ,  $-67.424985^\circ$ )



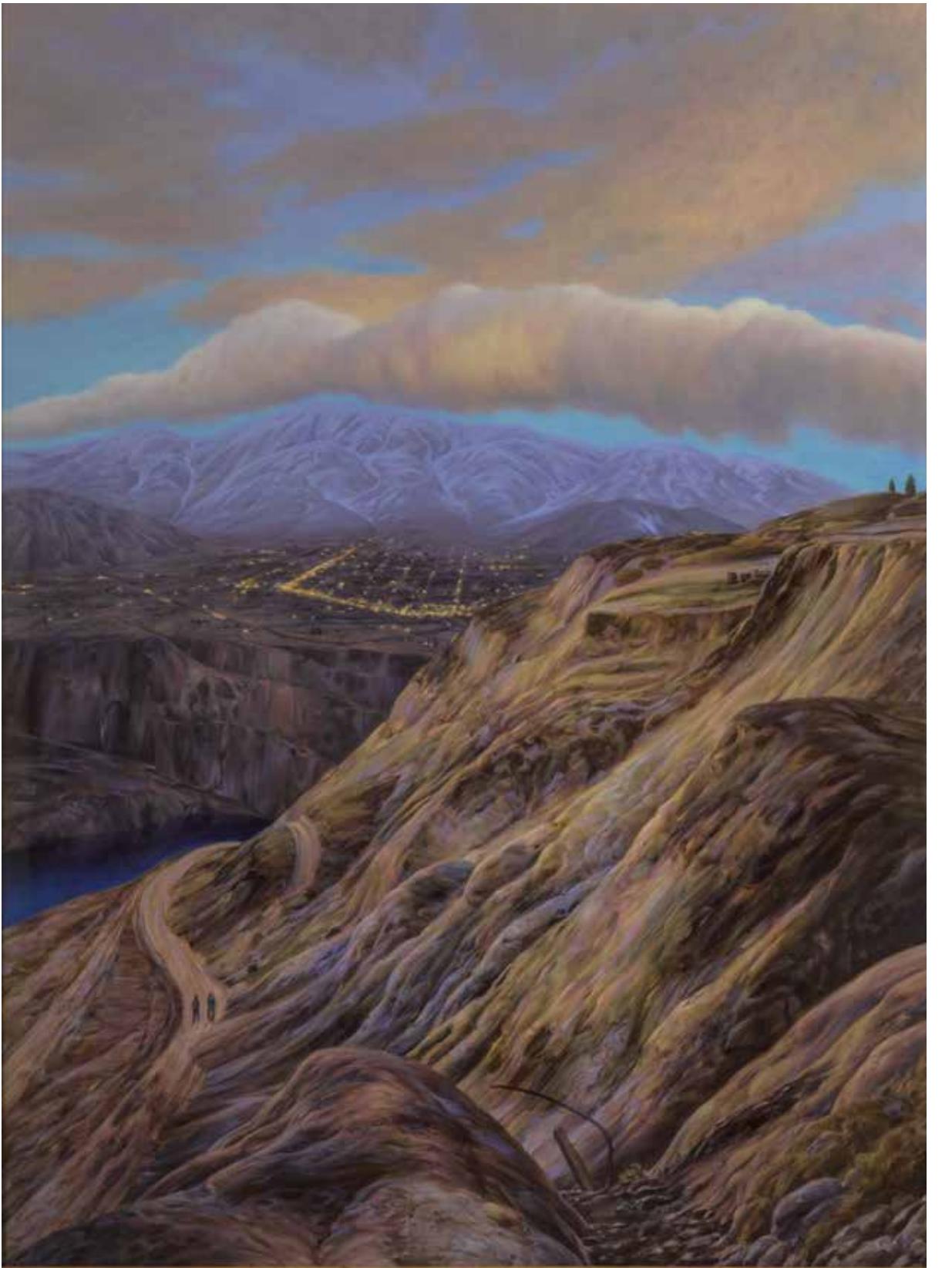
Chris Boyer, Atlantic Salmon Pens, Welshpool, New Brunswick, Canada ( $44.885980^\circ$ ,  $-66.959243^\circ$ )

164



Chris Boyer, Gold Mine Tailings, Whitehall, Montana ( $45.886368^\circ$ ,  $-111.991425^\circ$ )

165



Left: Chuck Forsman, *Love in a Pit Mine*, 1999, oil on canvas, 54 by 42 inches

## A GENERAL VIEW OF EXTRACTION

William Fox

The rubric of “extraction” for a series of long-running exhortations and examinations about human use of land and associated resources—a public effort culminating periodically along the way with publications, exhibitions, and conversations—opens up an opportunity to discuss what the word performs. For example, the bumpersticker adage “If it’s not grown, it’s mined” is not exactly a Zen koan, but it points out that everything we consume—from food, to clothes, to cellphones—is made from materials derived from only two mechanisms. I’d add to that proposition research geologist Bill Langer’s observation, that “if it’s growing, it’s mining.” Langer points out that agriculture is constantly mining soil for nutrients, and is also often dependent on loess, the wind-blown dust from deserts that provide key resources, such as phosphates, to agricultural lands in much of the rest of the world.

My point is that human extraction of resources is part of nature as well as culture, part of the universal chain of action that transforms the hydrogen burning in stars into all of the elements up to iron, and then via supernovas up through all the heavier elements, such as uranium. Nature works by building the blocks that build life, and our species, as with all others, is built from extraction at every level. But every time one material changes into another, through natural or artificial means, a quantity of energy is dispersed as waste heat. That’s called entropy. Eventually, that energy is so attenuated that all matter grows cold and inert. All energy stops, no information flows from one place to another, and nothing moves. That heat death of the universe, an inexorable consequence of entropy and the Second Law of Thermodynamics, which Einstein termed the only law of physics that would never be overturned.

But that’s a long time in the future, a process our universe is currently presumed to be only about halfway through, and our species will have been but a momentary and almost invisible flare in the career of the cosmos. Entropy as a process on our planet, however, is speeding up dramatically via human technology, the development and use of which increases rapidly as our population explodes.

How we determine our efflorescence on Earth, and the effect of it on ourselves and other species—which is to say our moral obligation to the planet—is where we have a say in how we live within the universal dynamic of extraction. It’s a question of scale, among other things: how much do we consume, how fast, how much do we waste, and simply how many of us there are performing extraction. Physicist Geoffrey West in his book about scale parses out many of the relevant numbers, some of which are as follows.

Extraction and entropy have been established facts of human life since we discovered fire, but they became a problem once the Industrial Revolution started around the late 1800s. That’s when coal-fueled steam engines began laying down a strata of carbon around the world that marked at least one definition of what some scientists call a new era, the Anthropocene. Carbon was, however, only a symptom. The real issue was the exponential growth of the size and number of cities that began then and continues today. Two hundred years ago, for example only 4 percent of Americans lived in cities; today it’s more than 80 percent. That trend is worldwide. Every two months the number of people equivalent to the entire New York metropolitan area moves into cities. Every eight weeks fifteen million people make that migration. Consider that China is building 300 cities to hold more than a million people each during the next twenty or so years, and that both Africa and India are following similar trajectories. West points out that this is “by far the largest migration of human beings to have taken place on the planet.”



Garth Lenz, *The True Cost of Oil*, Triptych, 2011

The amount of biological energy it takes to keep a human alive averages 2,000 calories per day, or about ninety watts, the equivalent of what powers an incandescent lightbulb. During pre-agricultural times the human population is estimated to have been as large as ten million people, and our energy consumption was still on an even keel with the rest of the natural world; our rate of entropy was manageable within the planetary ecosystem. Now there are twenty thousand times as many of us. Furthermore, to keep alive a person in a city, which requires powering everything from infrastructure and vehicles to home computers, takes 11,000 watts per day in the United States, a standard of living that is the goal of most people on the planet (which, in turn is why so many people are moving towards cities, and toward that goal). An estimated third of our energy use in America goes to waste, which is to say entropy. Pre-technological “natural” processes—including the growth of plants, forest fires, radiation generated by minerals—produce heat, but in manageable, ultimately useful levels. How do we return to that level, where entropy increases only very slowly over time? How do we lower the entropy gradient?

It's worth quoting the numbers, even though we are basically an innumerate species that can't reliably count past a hundred. But put it this way: at the height of the Roman Empire the worldwide human population is estimated to have been 300 million people—a little less than the current population of the United States. That was enough people to move more dirt on the surface of Earth than rain, which had been the primary force rearranging terrestrial geography for billions of years. Or, consider that in the first forty-five years following World War II humans impounded so much water behind the largest dams in the world—all in the northern hemisphere—that we altered both the axis of the Earth and the rotational periodicity of the planet. The changes were small but measurable using GPS.

We can solve much of our energy problems with solar panels. The sun delivers more power in a single hour to the Earth's surface than is used by the whole planet in a year. Relative to our current carbon-based energy practices, converting more sunlight into electricity would reduce entropy toward a level of waste heat comparable to photosynthesis in plants, whereas an expanded role for nuclear power would result in an increase of total entropy. Before

humans swamped the planet, energy consumption took place in an open system, where sunlight from a source external to the planet powered the world. Once we opened the Industrial Age and the sun was no longer the primary source of energy, our burning of fossil fuels essentially converted the planet into a closed system—one that relied primarily upon internal resources such as coal and oil. Ultimately, such resources are finite, whereas the sun's energy is, relative to the timespan of human civilization, virtually eternal. Burning up finite resources in a closed system is not a successful strategy for life on Earth. Add today's sunlight to the accelerated burning of fossil fuels—essentially mineralized organic material that stores ancient sunlight—and the result is a rapidly warming planet whose ecosystems are unable to cope. Species start dying.

Scientists and engineers aren't the only people dealing with the entropic fallout of resource extraction—the “global thermodynamic dysfunction” as Paul Mankiewicz and Dorion Sagan put it—a mechanism that is putting into peril the entire terrestrial ecosystem. In their 2016 essay, Mankiewicz and Sagan discuss the work of artists Helen and Newton Harrison. As progenitors of the eco-art

movement around the world, the Harrisons began intervening into the systemic failures of ecosystems at the local level in the early 1970s with a small lagoon north of San Diego, where they were teaching. By the time the 2000s rolled around, they were taking on the entire peninsula of Europe, the Tibetan Plateau, and the 400-mile-long chain of the Sierra Nevada. Their proposals included: farming techniques for Europe that would make the topsoil act like a sponge to re-normalize the water cycle; a reforestation project in Tibet to keep the Himalayan rivers flowing; and planting the Sierras with ensembles of plants that would slow forest fires and regulate clean runoff of snowmelt from the mountains. Through poems, performances, annotated maps, and photo-collages, they convinced entire governments to at least acknowledge these problems.

By the end of their careers, the Harrisons came to understand that their role as artists was to moderate the gradients of entropy in ecosystems, to lessen the loss of energy transferred, and to see that it would dissipate in ways slow enough that life could cope. They believed that you couldn't stop extraction or entropy, either natural or human caused, what the Harrisons acknowledged as a force majeure. But



Richard Misrach, *Roadside Vegetation and Orion Refining Corporation, Good Hope, Louisiana, 1998*

you could design ways to build resilience to our excesses in rural and urban ecosystems.

The idea that artists could act directly on and with the surface of the planet came of age in the 1960 and 1970s with the advent of Land Art, when artists such as Robert Smithson, Michael Heizer, Nancy Holt, and Patricia Johanson were moving around dirt and building materials at architectural scale. Many artists around the world soon began to integrate Land Art techniques to rearrange geomorphology with the needs of eco-art to address real world problems.

One example is Daniel McCormick, an artist who studied briefly with James Turrell, who along with his partner Mary O'Brien developed a sculptural vocabulary derived in part from Land Art, which they deployed in service to rebuilding oyster beds in the Bay Area. They also created sculptures to help restore tidal wetlands that slow storm surges along the Gulf Coast, and to manage flood erosion along the eastern front of the Sierra Nevada, a project downstream from and closely linked to the work that the Harrisons were doing higher in the same mountains.

The Harrisons understood that the Sierra Nevada was warming so rapidly that species were being forced to move up into increasingly higher elevations, and then simply disappearing, in essence “boiling off.” This had happened before several times in the life of the range, but at much slower rates, which allowed other species time to adapt and move in to occupy niches the previous species had left open. It was a succession guided by multiple evolutionary mechanisms moving in concert over time, a process that preserved the flow of clean meltwater for downstream use. Now the changes were happening magnitudes more quickly, forced by massive human energy consumption from fossil fuels dumping waste heat into the atmosphere. The species moving into the empty niches this time included highly flammable grasses that outcompeted other plant species, and that served to exacerbate the problems via the fires, and in the process degrading the quality of the meltwater. The Harrison’s proposal was to establish test plots at different elevations to see what mix of species would be resilient in the face of the rapid change, and that would slow the spread of increasingly common catastrophic forest fires and consequent erosion.

Working with the Center for Art + Environment at the Nevada Museum of Art, located downstream in Reno, they began a multi-year engagement with the University of California Berkeley Sagehen Creek Filed Station located in the mountains north of Truckee. They established plots there that would be monitored over decades to test the success of the plant ensembles.

Soon thereafter the Center began work with The Nature Conservancy to create art projects along the rivers in Western Nevada that the Conservancy were restoring to more natural flow regimes. McCormick and O'Brien, working with teams of local volunteers, designed, built, and installed structures from local materials, such as woven willow, that would redirect and slow flood waters, thus preventing rapid erosion of river banks while providing new hab-

itat for indigenous and often endangered species. While the Harrison project has not yet produced results, which will take years to measure, the McCormick and O'Brien eco-sculptures produced immediate benefits.

Art can also make it possible to prevent extraction before it happens. Photography has been the recording medium of choice when it comes to resource extraction and its consequences, such as climate change. And photography from at least the time of Ansel Adams during the 1960s has been a primary tool for eco-advocacy. John Reid was a professor of photography at the Australia National University in Canberra who would take his students on field trips into the forests of nearby New South Wales. One of the locations he favored was the Monga forest, which contains at least one relict species from the great woodlands of Gondwanaland that two hundred million years ago encompassed the Antarctic and parts of southern Africa and South America, as well as Australia. The forest, which also contained multiple sacred sites, was being logged and under threat of eventual extinction. Reid, a fierce conservationist, brought his artistic practice to bear in service to the environment. In addition to providing photographs of the forest, however, he did something very unexpected.

Noticing a photographic artifact in one of his shots taken of a stream, a flash of light that looked very much like a plan hominid swimming underwater, Reid undertook a multi-year project to document the presence of what he named the “Fishman,” the last unknown living hominid on the planet. He convened a national press conference to present the photographic results of his “artistic discovery,” stating that it would be entirely improper to demolish the habitat of such a rare creature. The resulting press became an important part of the effort to publicize the threat to the forest, which resulted in Monga being declared a national park. Whereas photographers from Richard Misrach to Edward Burtynsky have created definitive bodies of work

documenting extraction, Reid took the tradition a step farther by creating a photographic fiction that was proactive. The point was that it was possible for artists and scientists to work together through non-profit institutions to prevent deleterious entropic effects caused by the extraction of resources.

As a final example of how to slow the gradient of entropy, the artist Elizabeth Monoian and architect Robert Ferry founded an international biannual art and design competition in 2009 as a way of encouraging their peers to propose sustainable sculptures and built structures as engines of renewable energy. Working in locations as diverse as Dubai, Santa Monica, Copenhagen, and Melbourne, the Land Art Generator Initiative (LAGI) competitions drew enthusiastic responses from hundreds of artists and design firms, and the subsequent exhibitions and publications have reached huge audiences. In some places, such as Melbourne, public funds are being used to prototype and construct the actual projects. The competitions have become so popular that they are now being run annually with the most recent competition addressing a remote area of the Great Basin Desert near the site for the annual Burning Man event.

In 2016 the Burning Man organization bought Fly Ranch, the 3,800 acres of which include a notable geothermal resource, the Fly Geyser. The LAGI competition is inviting proposals that will address power (solar, wind, biomass, and geothermal generation and storage), the use of water, construction of shelter, growing food, and land regeneration. After the application process is finished in May 2020, and entries processed and juried, the winners will receive funds to build working prototypes with the goal of building the final project.

These four examples of art engaging with entropic gradients to slow them down are sensible interventions, yet rich in metaphoric and visual beauty. The idea that humans can deploy a temporary technological end run around entropy is aspirational at best. But a societal response that involves both cul-

ture and science has a chance of lowering the steepness of the gradient we've created. We can choose to simply waste less and recover more, but that doesn't solve the fact that we have already created so much thermal momentum in the system that we're now in an era of feedbacks that will last for millennia. For example, heat reflecting Arctic sea ice melts, exposing the dark heat absorbing surface of open water, which soaks up more heat causing more ice to melt—and, to boot, ocean bed methane starts its rise to the surface.

There's no going back, and time will tell if human civilization can handle the consequences. One of the reasons that science fiction literature is so full of dystopian future scenarios is that we've already made the easy extractions. We've mined everything essential that's easy to get to. If we had to restart technological civilization, it would thus be physically beyond our abilities to do so. The Second Law of Thermodynamics obtains: the arrow of time moves in one direction only, and you can't put the ore back into the ground once it has been used in a cellphone. And extracting it from the innards of a computer takes a technology that...well, you get the idea.

The Extraction Project is part of the societal response we must create in order to meet any number of challenges. It's a public collaboration, a chorus of voices raised not simply in protest, but as an active agent of change. May it ring loud and far. To be clear: it's not as if we have a choice.

The examples of eco-art projects mentioned in this essay are often cited by the author in lectures around the world. The archives of the projects all reside at the Center for Art + Environment at the Nevada Museum of Art in Reno where they are studied by researchers from around the world.



Chuck Forsman, Bakken Flare with Sun, 2019

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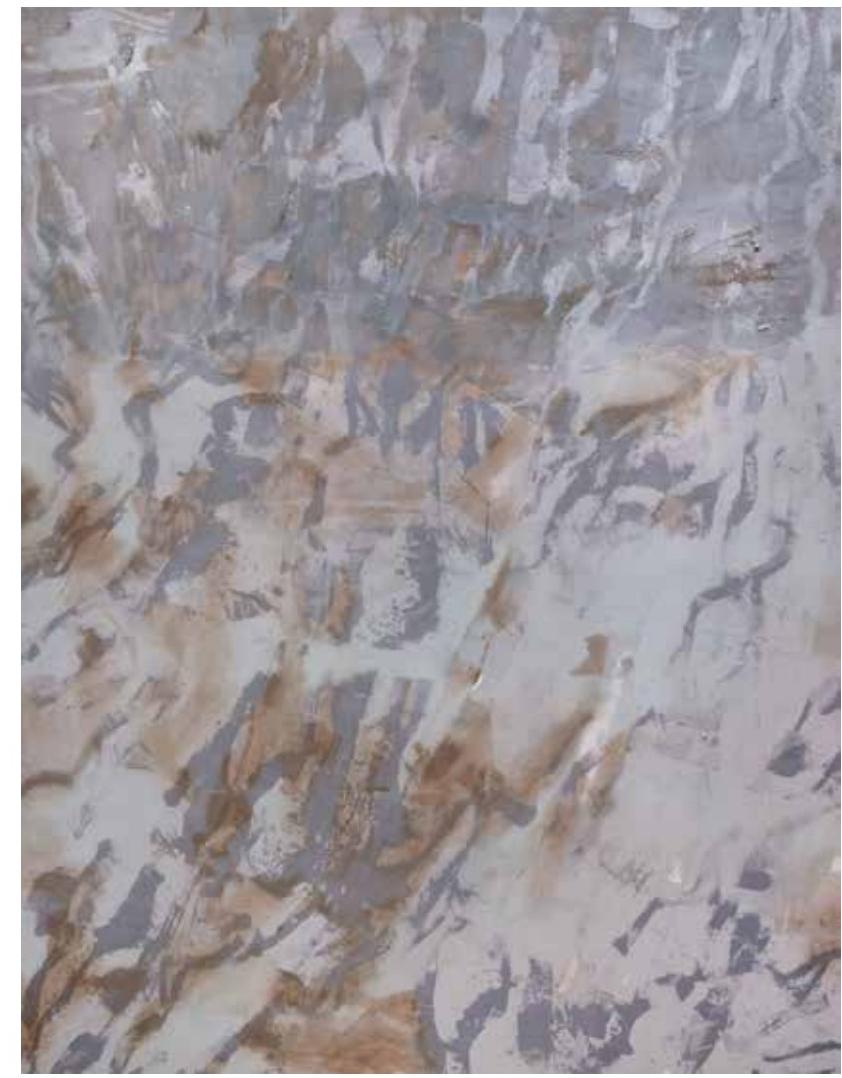
The Land Art Generator Initiative produces a book for each of their major competitions. The first was *The Time is Now* (Singapore, 2012) and the most recent (as of writing) *Energy Overlays* (Munich, 2018).



Joan Perlman, Untitled, 2007, acrylic and ink on canvas (private collection), 57 by 67 inches



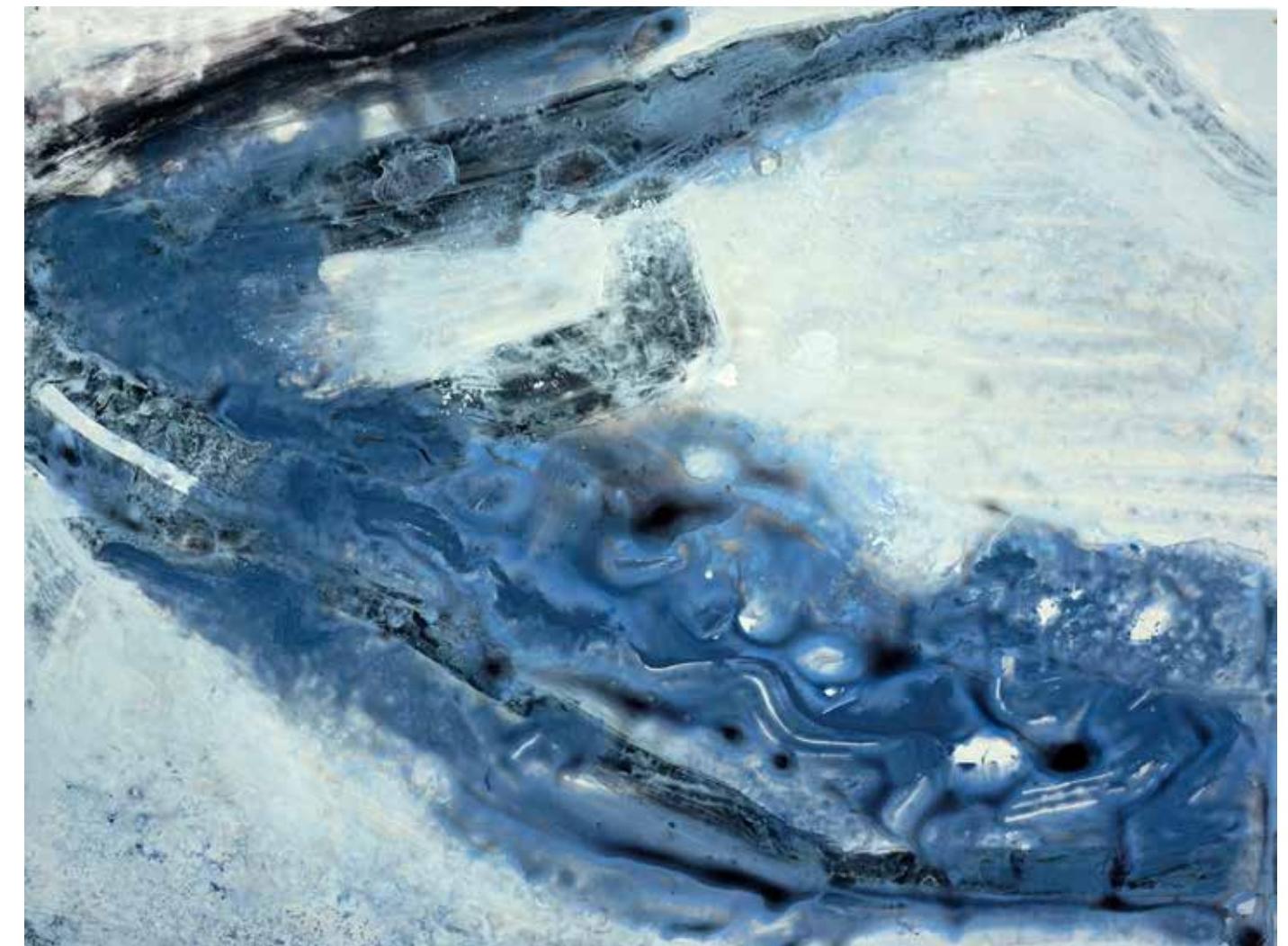
Joan Perlman, Untitled, 2014, mixed media on Yupo, 34 by 52 inches



Joan Perlman, Kreppa I, 2016, acrylic on canvas, 96 by 73 inches



Joan Perlman, *Nyíós*, 2016, acrylic on canvas (private collection), 96 by 84 inches



Joan Perlman, Untitled, 2015, gouache on Yupo, 9 by 12 inches



Laura McPhee, Early Spring (Peeling Bark in Rain), 2008, archival inkjet print





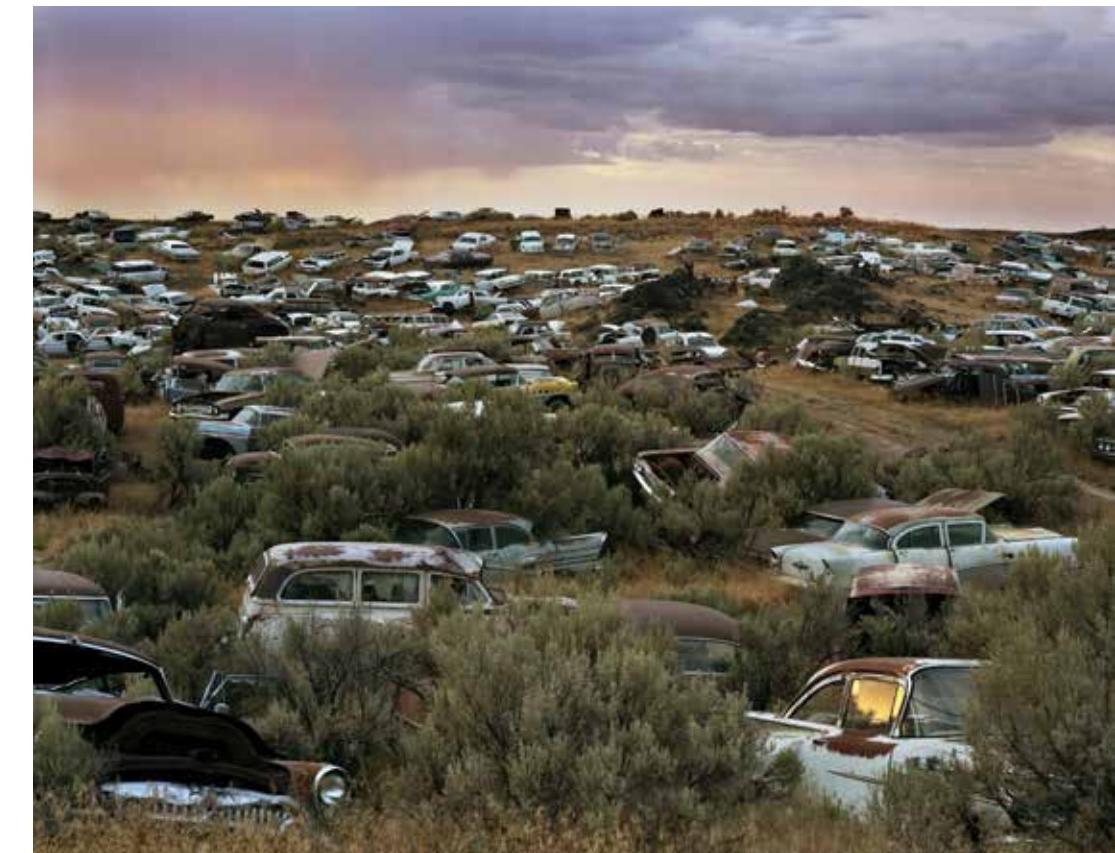
Laura McPhee, *Former Copper and Turquoise Mine, Lavender Pit, Bisbee, Arizona*, 2012, archival pigment print



Laura McPhee, *Open Pit Coal Mine, Kemmerer, Wyoming*, archival pigment print



Laura McPhee, *Jungo Flats, Humboldt County, Nevada*, archival pigment print



Laura McPhee, *L & L Classic Auto Salvage, Gooding County, Idaho*, archival pigment print



## AT ANY GIVEN MOMENT

John Grey

A row of purple lilacs,  
a stone fountain centered by a bird –  
nothing begins like a beginning.  
Vireo, thrush,  
magnolias spread pink gauze –  
but an interval will do just as well.

We spend our lives learning to speak  
to one another,  
from the dark, moist tightness of  
our mother's woman  
to the day death crushes the last beer can against our forehead.

In the meantime, freak storm,  
sky turns blue-black,  
lightning strikes somewhere behind the Texaco sign,  
thunder rattles the neighborhood,  
inventories every house with a good shake  
and a rattle of specimens in glass.

It's all life—  
the clearing, the washed sky,  
the hushed-blue of a swamp sparrow's egg—  
anytime can have memories  
we would never sell off in a rainstorm,  
an heirloom like a small wooden child's chair  
or tessellated stones, or rain warm as blood.

Life gives such wonderfully rich examples,  
gastronomic spells  
people in photographs  
at their nearest moment  
of coming back to life

Even a smile  
as raw and wide as a dog's,  
two quarter-moons of lipstick  
painting the rim—  
nothing adds to the album of being  
like the expression on a passing stranger

Left: Laura McPhee, *Cliff Swallows' Nests and Texaco Sign, Challis, Idaho*, archival inkjet print



Richard Misrach, *Release Flare, Mississippi River Corridor*, 2010

## BEARING WITNESS

### A CONVERSATION WITH RICHARD MISRACH

Sam Pelts and Eric Zhang

SAM PELTS: We are interviewing you near the beginning of a global pandemic. Conditions will obviously be very different by the time people read this, but at the time of this interview (March 2020), the state of California has just been placed under orders to “shelter-in-place,” meaning non-essential businesses have closed and people have been asked to social distance from one another. We are not to venture out except for essential needs. This is the first order of its kind in the United States, though similar measures are under consideration in other U.S. cities. Since all three of us are Bay Area residents, we are of course interviewing you remotely. So I’ll just ask you first: how are you holding up?

RICHARD MISRACH: It’s only been ten days since you sent me your questions, and within that period of time the United States has already surpassed China in total cases of COVID-19, and we haven’t come close to peaking. It’s a brutal historical moment that no one could have anticipated (well, except for sci-fi!). I have been able to distract myself with projects at home, but so many people around the world are suffering from the health or economic fallout of this virus. It is heartbreaking. That said, my wife and I are able to comfort each other, and my work redirects my thoughts.

SP: What are your thoughts on the Coronavirus situation as it stands? Do you think that the government has responded appropriately, either on the local, state or federal level? This level of social disruption is unprecedented in our lifetimes. How should artists respond?

RM: To be fair, these circumstances are so unprecedented that no administration probably could have handled the outbreak without making any mistakes, although some of the errors appear to be unforced. I do think that governors like Cuomo, Newsom, and Pritzker, as well as health experts and epidemiologists like Dr. [Anthony] Fauci have been doing a great job. The politics are ugly and will likely get uglier.

But I should also say this pandemic should be a huge wake-up call. There are those out there, even folks like Bill Gates, who have been warning that we were vulnerable to a viral pandemic. And we did nothing to prepare. If we had, so many of the tragedies we are about to face could have been avoided. Should this not also apply to global warming? If we could be proactive now, essentially begin taking the threat of global warming seriously the second we get through this pandemic, could we significantly mitigate, if not prevent, the impacts to come? Could there be any bigger lesson from this moment?!

SP: The economic outlook is pretty bleak. I’m hoping that once the public health crisis is over we’ll look back on the New Deal era as a template for restructuring our economy to be fairer, strengthen social programs and place less emphasis on endless economic growth. It is a myth that the economy needs to grow and grow exponentially—that’s the pathology of a virus. When all this is over, we are going to need a new New Deal. And if you’re going to have to rebuild large sectors of the economy anyway, why not factor climate change into the equation and make sure that the New Deal is Green? I also hope that people will begin to recognize the value of expertise again, to believe what scientists are saying.

RM: For the arts, generally there is little chance of artists directly impacting policy per se. That said, I think the best art feeds the soul of civilization. Think about all of the art, from day one, that has transcended wars, famines, the fall of empires. I



Richard Misrach, Sugar Cane and Refinery, Mississippi River Corridor, Louisiana, 1998

think that artists can directly and indirectly address this existential moment. They certainly will be influenced by it. I know for myself, my wife and I just did an “auto-interview” for Pace—we interviewed each other about “coupling” and “social distancing” at home, and I selected a number of images in my archive that unexpectedly reflect on social distancing. This moment has given me new eyes to see some of my own work in fresh ways.

SP: Many of the environmental and social problems that your work has been addressing for decades seem to have accelerated in recent years, as the world’s industrialized population increases and as the forces of nationalism and far right populism have re-emerged with renewed force all around the

world. What do you think should be the role of photography—or art in general—in an era increasingly defined by environmental degradation, industrialized exploitation of naturalized resources, and de-humanizing political attitudes toward immigrants, all taking place in a hyper-polarized, fractured media context that disseminates disinformation and deploys propaganda on a scale previously thought unimaginable?

RM: Wow. That’s quite a question! In short, artists will follow their own muse, whatever direction inspires them. And that is always going to be determined by personal circumstances. But for those artists compelled to address more political issues, all power to them. As I mentioned earlier, art rarely im-

pacts direct political action, but it can raise awareness, and indirectly shape the way people think, which eventually can have a real world impact.

For me, photography is a profound means of bearing witness. I think my exposure to images of the Auschwitz concentration camps when I was a teenager changed me forever. Those images gave me an understanding of how powerful photography can be. Of course, the photographs were only seen after the war concluded, so they didn’t directly alter the trajectory of the Nazis’ crimes against humanity at the time they were being committed. But I would argue that even after the fact, the horrors in those photographs have shaped our behavior for the better ever since. Bottom line, I think it’s important for artists/photographers to bear witness, to give us pause, to help us contemplate what we are doing to the planet. None of us can singularly fix it, but each of us can contribute to the larger effort. At protests at the Nuclear Test Site in the 1980s, there was a concept thrown around: “The hundredth monkey.” The argument is that you show a monkey how to use a tool. And you show another how to use a tool. And by the time a hundred monkeys know how to use the tool it will become part of the species’ innate set of traits. I am oversimplifying, but activists felt that when you spread an idea enough, it will take hold and be naturalized. If enough artists address these issues, their positions will be adopted by society at large. So goes my parable...

ERIC ZHANG: As a photographer, what drives you to start a new project? And how do you make the decision on where and when to take the photograph? While some of your projects are event driven, like the book *Destroy This Memory* and the *Oakland Fire* series, others feel more like sites that you have stumbled upon. What is your typical research process?

RM: In the early days, I would get a brilliant idea, and then head out in my VW camper to work on it. Inevitably, those projects just didn’t pan out so I

had to change my method. I would simply get in my van and drive and chase the light. I would throw my 8 by 10” camera and tripod in the back of the van; put some coolers with film and film holders on the floor; grab a bunch of dry food like trail mix; and then just head out for three weeks. Inevitably some project would emerge from the images I made and I’d be off and running. I called this strategy being “aggressively receptive.” But I rarely do any advanced research.

SP: You seem to occasionally revisit projects, sometimes decades later. I’m thinking of your *Cancer Alley* series documenting environmental issues in Louisiana along the Mississippi river. What were your initial thoughts when you first explored those locations, and what made you want to return years later?

RM: I photographed the Mississippi River corridor between Baton Rouge and New Orleans, which is home to a hundred industrial complexes, and is known as “Cancer Alley.” I discovered it on an exploratory trip I made in 1998 (I’d been given a tip by my friend Lew Thomas). I did the first major shooting then. The work was shown and published soon thereafter (the High Museum of Art and Aperture, for example). But I had always wanted to do a book with a reclamation project proposal, and in 2010 someone introduced me to Kate Orff, a brilliant landscape architect, and we began collaborating. I went back to do a follow-up round of shooting and we published the book *Petrochemical America* in 2012. Generally, when I feel like I’ve exhausted what I can do in a place, I tend to move onto other projects.

EZ: Would you mind sharing your process when you arrive at a site? Do you start shooting right away or do you like to “take a lap” first? Most of your projects tend to cover a pretty large area.

RM: Oh, I start shooting immediately. The pictures give me feedback. And if I can’t make the idea work



Richard Misrach, Bomb Crater and Destroyed Convoy, Bravo 20 Bombing Range, Nevada, 1986

as a picture, I move on. However, once I make a picture that shows promise, I return to the site over and over and over until I feel I've exhausted its potential.

EZ: How often are you surprised by what you find at a site? And to what extent, if any, is your research informed by interviews with local residents in the communities where you are shooting?

RM: I would say that the whole process is a thrilling act of discovery. I often don't know if anything I have is strong enough until I get home and begin editing. And then often I have to wait months to get some distance on the shoot, to make a final edit. But the process is non-stop exploring with the camera. And on a few projects, like the Bravo 20 Bombing Range and the Salton Sea Flood series, I did interview

locals to become better informed, though I'm not sure it had an impact on the pictures per se.

SP: The *Desert Canto* series is an enduring project that you have kept returning to in your career. Is it a love for the land itself that keeps drawing you back? Or is it more of a naturally recurring response to the continuation of destructive forces acting upon the land and your need to expose such behavior?

RM: Both! I so love being in the desert. The vast expanses, the light, the heat. It gives a scale to who we are on the planet like no place else. Hopefully, that beauty comes through AND creates a foil for considering our impact on the land. I think it's that dynamic between the two that is at the heart of my work.



Richard Misrach, Desert Fire #249, 1985



Richard Misrach, Desert Fire #81, 1984



Richard Misrach, Flooded Marina (gas pumps), Northshore, Salton Sea, 1983



Richard Misrach, Submerged Lamppost, Salton Sea, 1985



Richard Misrach, "This boat belongs here. Please remove your car from the boat without crushing it! Boat Owner," 2005



Richard Misrach, "Katrina is a bitch," 2005



Richard Misrach, Oakland Fire #12-91 [Hiller Highlands Overview], 1991



Richard Misrach, Oakland Fire #107-91 [Melted Tricycle], 1991

## INTO THE ANTHROPOCENE

David Gardner

WWW.LIGHTIGHT.COM

In 2016, those who determine such things officially agreed the Earth had entered a new Epoch in its evolutionary age. Termed the Anthropocene, it is defined as human-influenced, where our activity has caused irreversible changes to land, oceans, and air. Our new earth age is the starting point for this body of work that explores vast human-altered landscapes. I am both concerned and curious how repercussions from our rapidly expanding global need for agriculture, energy, and water impact our planet.

I investigate locations where the natural ecosystem has been altered or destroyed to provide for our burgeoning world population. In the Palouse grasslands—now wheat fields—of Eastern Washington, a mono-crop landscape terraformed through agricultural commerce creates a sense of bucolic perfection while disguising the underlying impact of single crop planting. Old and new energy extraction techniques in California are compared with images from the largest thermal solar plant on earth at Ivanpah, the fracking-revived oilfields at Oildale near Bakersfield, and massive windmill farms in the Palm Desert. Owens Lake in California and Lake Mead in Arizona illustrate how the demand for water has changed the landscape: a patchwork quilt of dust suppression measures in one and a high water “bathtub ring” in the other.

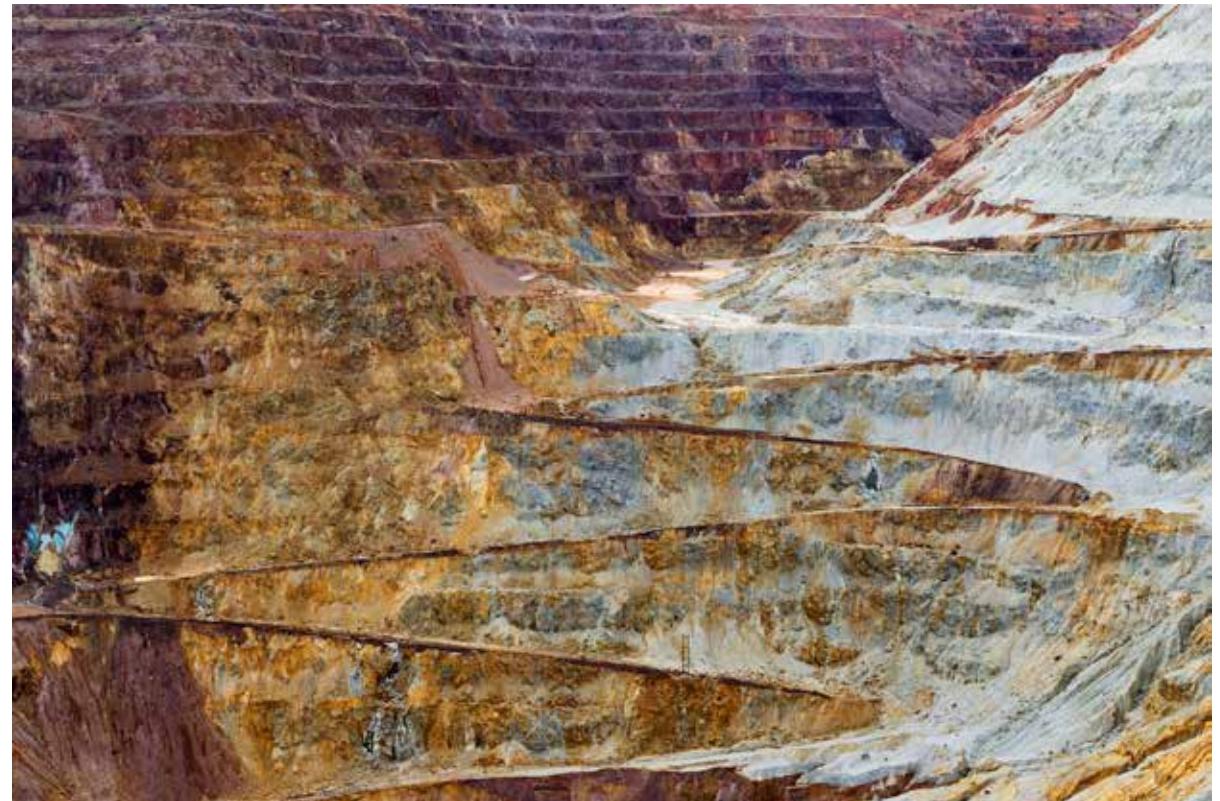
In each location, I was simultaneously dazzled and disturbed by the scope of these transformations—many occurring in my lifetime. What was revealed I found compelling—strangely alien but completely human. By allowing human intervention to speak over the landscape itself in my images, I imagine a new landscape, more of its Age, that highlights the dilemmas faced when considering a balance between exploitation and preservation.



David Gardner, Ivanpah Thermal Solar Plant, CA. Study #32, (35.34.4769N 115.29.6591W)



David Gardner, Cholla Power Plant, Winslow, AZ, Study #1 (35.9.6525N 110,27.8265W)



David Gardner, Lavender Pit Mine, Bisbee AZ, Study #8 (31,25.8500N 109,53.7061W)



David Gardner, High Water Mark, Lake Mead, NV, Study #3 (36,0.9196N 114,44.0505W)



David Gardner, Oildale Oilfield, Bakersfield, CA, Study #9 (35,24.6353N 118,58.6151W)

## GLOBAL WARMING

Jane Hirshfield

When his ship first came to Australia,  
Cook wrote, the natives  
continued fishing, without looking up.  
Unable, it seemed, to fear what was too large to be comprehended.

from After (Harper Collins, 2008)

## AS IF HEARING HEAVY FURNITURE MOVED ON THE FLOOR ABOVE US

Jane Hirshfield

As things grow rarer, they enter the ranges of counting.  
Remain this many Siberian tigers,  
that many African elephants. Three hundred red-legged egrets.  
We scrape from the world its tilt and meander of wonder  
as if eating the last burned onions and carrots from a cast iron pan.  
Closing eyes to taste better the char of ordinary sweetness.

from Ledger, (Knopf 2020)

## LET THEM NOT SAY

Jane Hirshfield

Let them not say: we did not see it.  
We saw.

Let them not say: we did not hear it.  
We heard.

Let them not say: they did not taste it.  
We ate, we trembled.

Let them not say: it was not spoken, not written.  
We spoke,  
we witnessed with voices and hands.

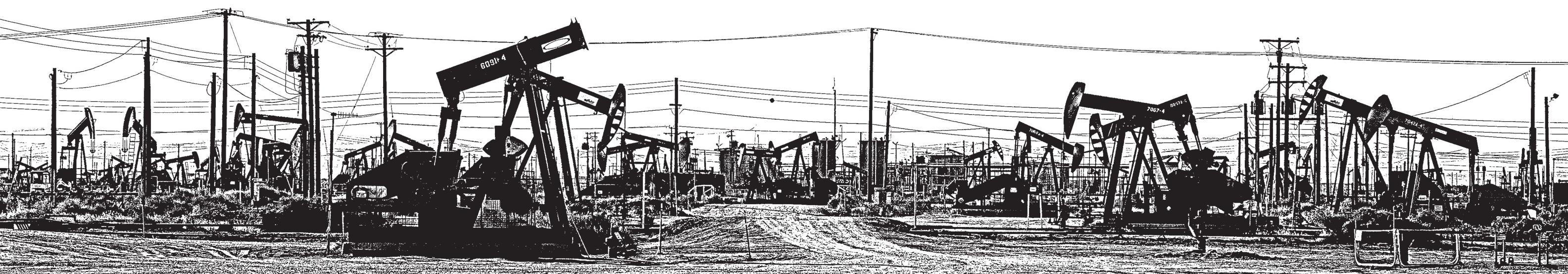
Let them not say: they did nothing.  
We did not-enough.

Let them say, as they must say something:

A kerosene beauty.  
It burned.

Let them say we warmed ourselves by it,  
read by its light, praised,  
and it burned.

from Ledger, (Knopf 2020)



## GHAZAL FOR THE END OF TIME

(after Messiaen)

Jane Hirshfield

Break anything – a window, a piecrust, a glacier – it will break open.

A voice cannot speak, cannot sing, without lips, teeth, lamina propria coming open.

Some breakage can barely be named, hardly be spoken.

Rains stopped, roof said. Fires, forests, cities, cellars peeled open.

Tears stopped, eyes said. An unhearable music fell instead from them.

A clarinet stripped of its breathing, the cello abandoned.

The violin grieving, a hand too long empty held open.

The imperial piano, its 89<sup>th</sup>, 90<sup>th</sup>, 91<sup>st</sup> strings unsummoned, unwoken.

Watching, listening, was like that: the low, wordless humming of being unwoven.

Fish vanished. Bees vanished. Bats whitened. Arctic ice opened.

Hands wanted more time, hands thought we had time. Spending time's rivers,

its meadows, its mountains, its instruments tuning their silence, its deep mantle broken.

Earth stumbled within and outside us.

Orca, thistle, kestrel withheld their instruction.

Rock said, Burning Ones, pry your own blindness open.

Death said, Now I too am orphan.

from Ledger, (Knopf 2020)

## IN A FORMER COAL MINE IN SILESIA

Jane Hirshfield

In a former coal mine in Silesia, a thousand feet inside the earth,  
a tongue kept speaking.

In the Arctic, by the triangular door to the Svalbard seed vault,  
a tongue, almost fearless, almost not clumsy, spoke.  
Spoke verbs, conjunctions, adjectives, adverbs, nouns.

In a small town in the Australian Outback,  
in the city of Nanjing, near a gate still recalling unthinkable closures,  
by a pit-mine lake in Montana, a tongue, almost steady,  
almost not stumbling, spoke facts, hypotheses, memories, riddles, stories.

Lungs accept their oxygen without trembling.

Feet stand inside their foot shapes, inside shoes someone has sewn.

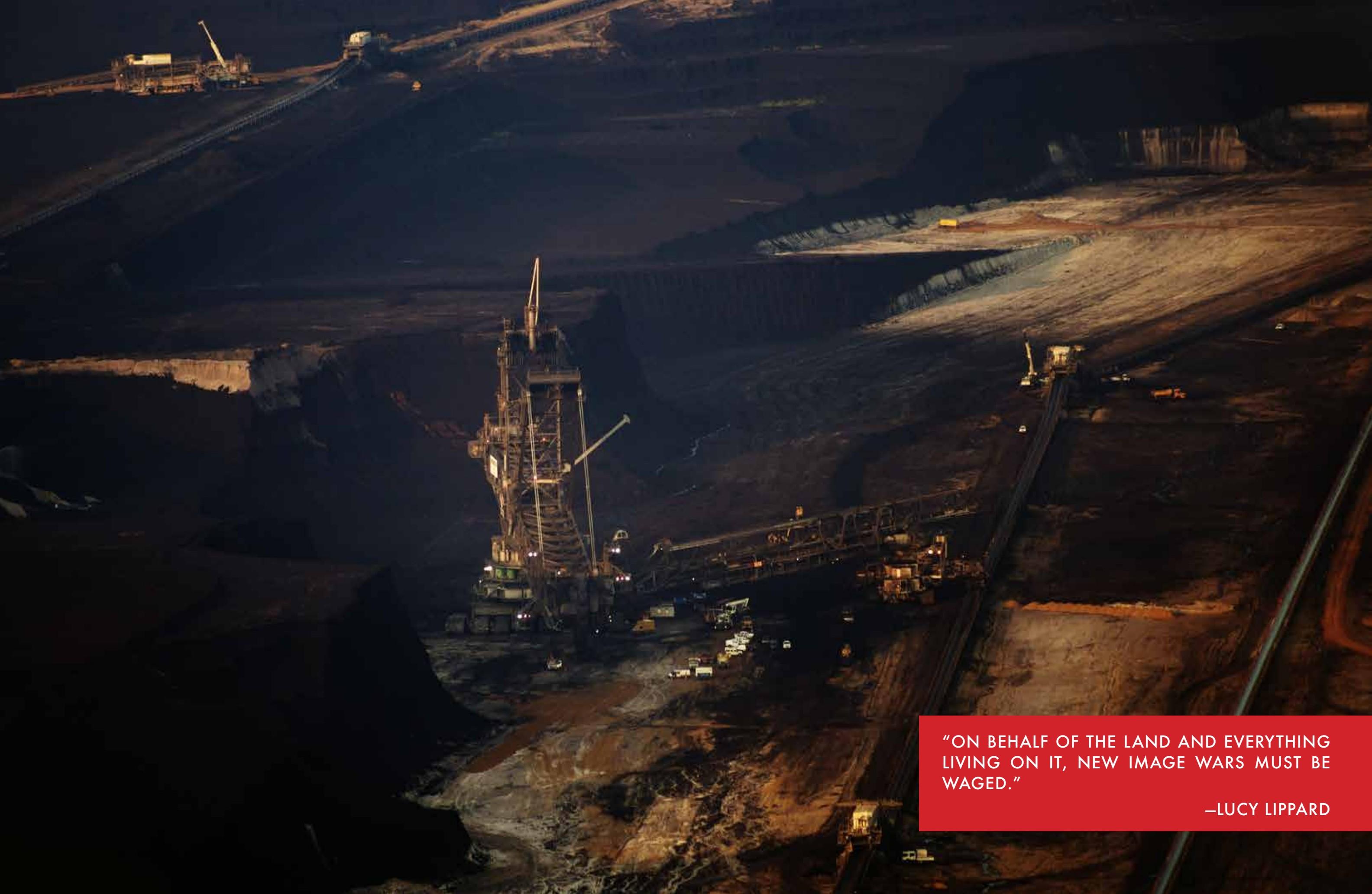
We close the eyes of the dead so they will not see their not-seeing.

Light falls on the retinas' stubbornness, on pupils refusing to turn toward or away.

Fireflies, furnaces, quicksilvers fill them, cities & forests glinting though already finished.

And the tongues, the faithless tongues, continue speaking,  
as lovers will, because they still love, long past the hour there is nothing left to say.

from Ledger, (Knopf 2020)



"ON BEHALF OF THE LAND AND EVERYTHING  
LIVING ON IT, NEW IMAGE WARS MUST BE  
WAGED."

—LUCY LIPPARD



Léonie Pondevie, *Fossilis, sunrise over the Hambach coal mine*, 2019, digital photograph. Previous page: Léonie Pondevie, *Fossilis, Hambach Coal Mine, detail*, 2019, digital photograph



Léonie Pondevie, *Carrière de clisson*, 2019, digital photograph



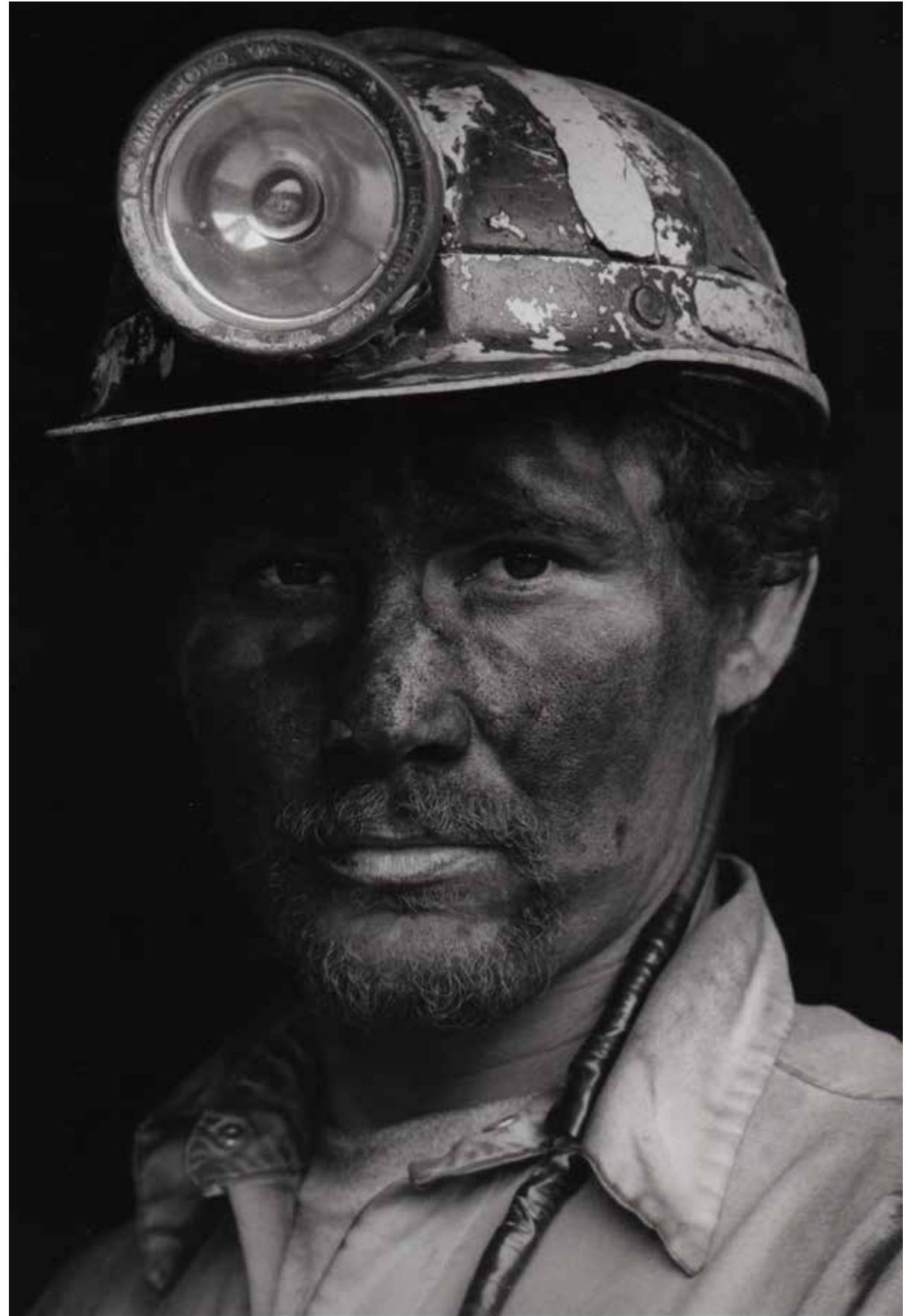
Ken Light, Coal Miner, Harlan County, Kentucky, photograph, ©Ken Light



Ken Light, Environmental Protection Agency, "Please reclaim." Turkey Creek Road, Wyoming County, West Virginia, photograph, ©Ken Light



Ken Light, Mining accident, 1965, Devils Fork Hollow, West Virginia, photograph, ©Ken Light



Ken Light, Coal Miner, Harlan County, Kentucky, photograph, ©Ken Light

## GOUGED EARTH / GOUGED PEOPLE

Craig Czury

January 22, 1959 the Susquehanna River burst through the roof of the Knox Mine, up from Wilkes-Barre, flooding the entire honey-comb of mines throughout the lower northern anthracite coalfield: 12 miners dead, thousands of miners out of work forever. I was 7 years old. Within 5 years our textile industry had moved south for cheaper labor... thousands of mill workers out of work or moved out of the region forever.

*I inherited the black-star hole  
through each one of these window panes*

I inherited the voices and attitudes of the men and women who were shut down and abandoned. A tremendous anger...a tremendous silence.

One high school student, after listening to me read my poems about the gouged earth, gouged people, sulfur creeks and mountains of slag, asked me if I was an environmentalist. I flipped off the lights, opened the window, rearranged my chair...hacking and smoking.”

from GOD'S SHINY GLASS EYE  
FootHills Publishing  
1985  
[craigczury.com](http://craigczury.com)



Michael Light, Black Thunder Coal Mine, Wright, WY, 2007



Jason Sheridan Brown, Circuit, 2019, coal, steel, wood, LED lighting elements and plastic, 60 by 64 by 30 inches



Kyle Gallup, Bethlehem Steel, 1998, paper lithograph transfer print from original photograph

## BETHLEHEM STEEL AND UNION ELECTRIC POWER PLANTS

Kyle Gallup

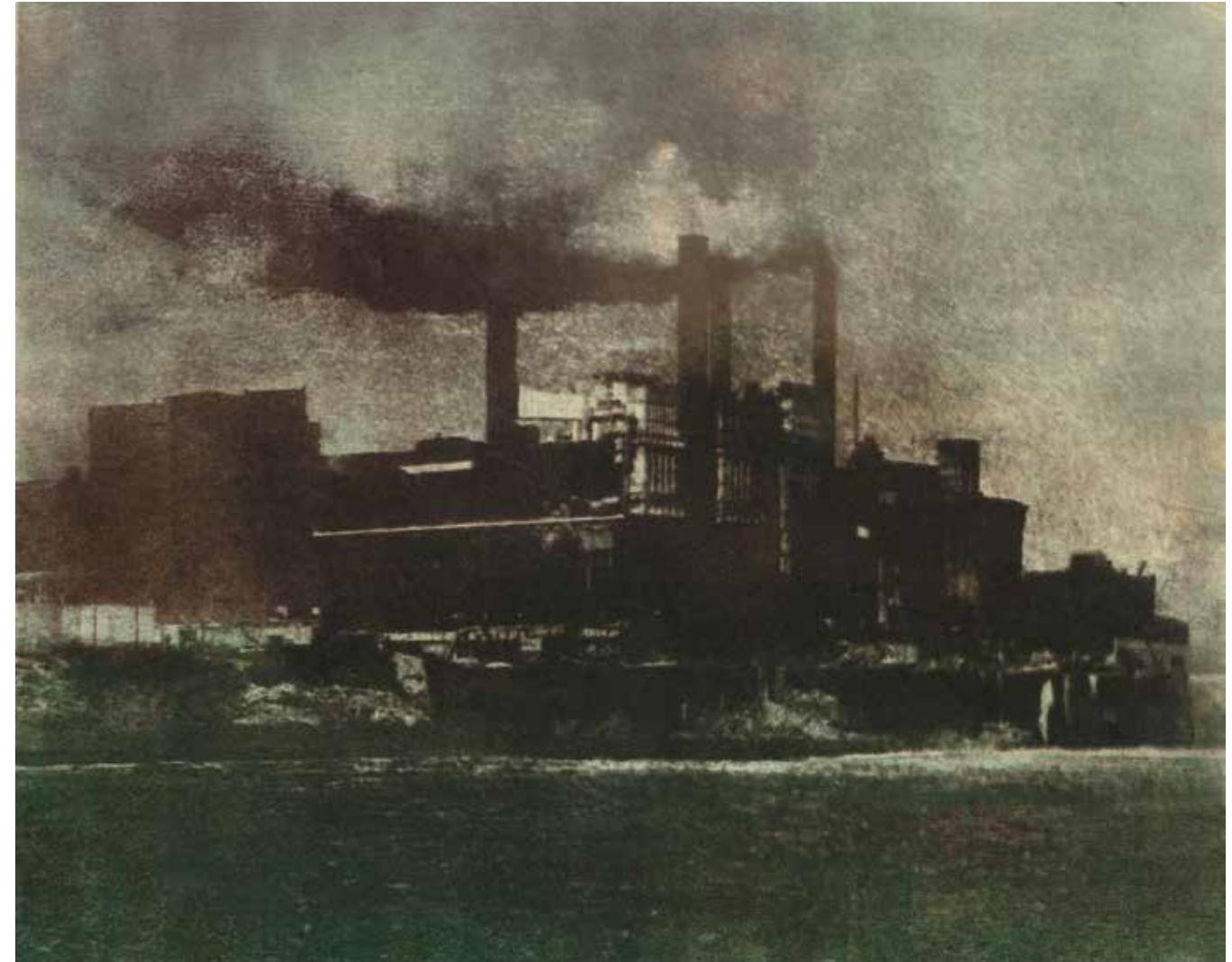
[WWW.KYLEGALLUP.COM](http://WWW.KYLEGALLUP.COM)

In the 1990s through the early 2000s I worked on a series of paper lithographic transfer prints that were one part documentary and one part painterly expression of disappearing industrial sites I was seeing on trips through the Northeast and in the Midwest. The series began as a way to capture the big, built forms in the environment.

While working on this series, human back-stories emerged. The day my husband and I photo-

graphed the Bethlehem Steel plant—the images used in my printmaking process—we hadn't realized that the plant had closed a short time before, perhaps only weeks. We were with our son who was a toddler at the time. The employees and their families were out on their porches in the town holding garage sales to generate cash. We spoke with them about their difficult situations—being out of jobs that they had held for years. There was much uncertainty and anxiety. Our son was given a stuffed animal that he happened to see in a box with a lot of other toys. The seller insisted on giving it to him and would not take any money from us.

I grew up in St. Louis, Missouri, where my father was an engineer. I made prints of the Union Electric Power Plant on the Mississippi River using his job site photos from a floodwall project along the river



Kyle Gallup, Union Electric Power Plant, 1997 paper lithograph transfer print from original photograph

in the 1970s. It powered the "Palace of Electricity" during the 1904 World's Fair, which brought my mother's family to St. Louis in the 1880s. I remember going downtown where the site was located, with my family on the weekends so that my father could see how the floodwall was progressing. This floodwall was intended to protect the power plant along with other nearby buildings. The nature of the printmaking process creates a disintegration of the plate and because of this, the Union Electric Power Plant looks more like a large steamboat on the river. The plant was originally coal-fired, changing over to oil in 1972 and then to natural gas in 1996.

Kyle Gallup is an American artist living in New York. Growing up in St. Louis, Missouri, instilled in her a love of the prairie and wide-open spaces. As a painter she traverses the line between known and invented landscapes. She has developed an intuitive approach to her work that combines observation, experience, and memory. She received a BFA from Tufts University and the Boston Museum School. In 2019 she was invited to be the first international resident at Colart and Winsor & Newton Paints in London, UK, where she experimented with the historic paint company's new line of environmentally friendly Cadmium-free line of watercolors. She has shown her work in the US, Canada and Britain and is in private and corporate collections, including Robert Blackburn's print collection in the Library of Congress.



Paulette Myers-Rich, High Bridge Power Plant, 2007

## VIEWS FROM THE HIGH BRIDGE COAL-FIRED POWER PLANT

Paulette Myers-Rich  
St. Paul, Minnesota, 2007  
[WWW.PAULETTEMYERSRICH.COM](http://WWW.PAULETTEMYERSRICH.COM)

I'm standing in the boiler room on the top floor of the coal-fired High Bridge Power Plant. I'm alone, even though I arrived with a community activist group, invited on a tour of the facility before it's demolished once the new gas-powered plant upstream is operational. We're considering what the site may eventually be used for and we want to see the view from the roof for context.

The context is the Mississippi River gorge. The High Bridge and the power plant it's named for sit on the banks and are the dominant features of my neighborhood called Uppertown, the oldest in the City of St. Paul. Houses from territorial times to the 1870s line the north bluff 150 feet above the river between its edge and the city's first road, the route from the Red River Valley to the riverboat landing below in the early 1800s, when the Métis came into St. Paul with their wagons full of buffalo hides and furs to send downriver to New Orleans.

This area was such a wild part of the Minnesota Territory, it was called Pig's Eye Landing, named for the whiskey trader that served soldiers from nearby Fort Snelling and the fur traders who came down from Pembina in the North. After statehood, it was renamed St. Paul by a local priest. It was a boom-time when the population rapidly swelled and speculators thrived. Buildings went up overnight. One simple limestone structure, quarried on site, was used as combination bar, whorehouse and post office before the Civil War.

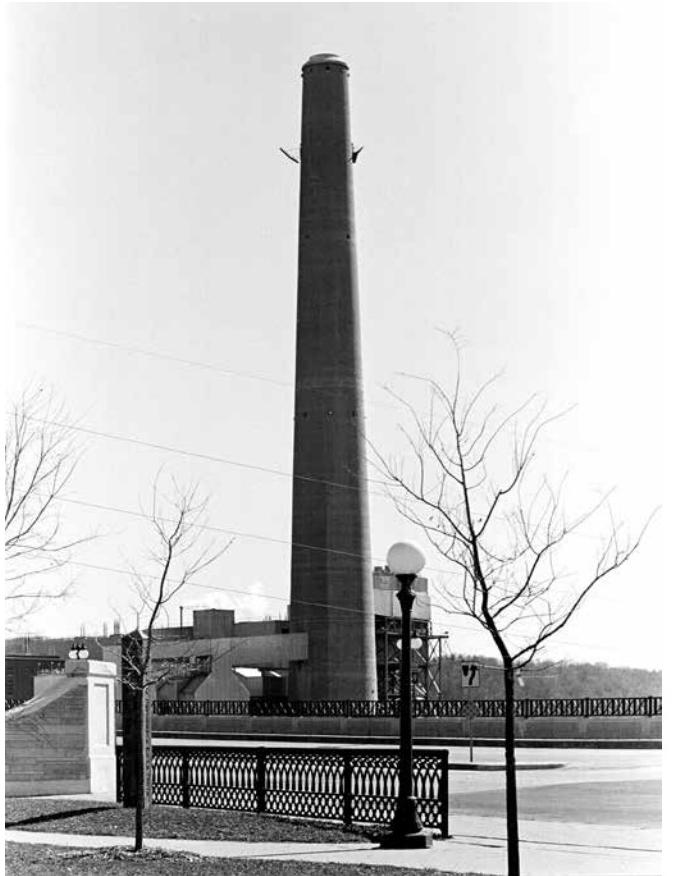
By the 1920s Uppertown was considered a derelict and undesirable part of the city and it made sense to build this sorely needed power plant directly below on the riverbank. The Mississippi River-

front was completely industrial by then, a working river covered over in rail yards and factories, which by 2007 have been removed and are slowly being replaced with housing and parks with bike paths.

Uppertown in 2007 is a combination of lovingly restored houses and tired, neglected, and vacant properties on small lots with no setback from the sidewalk or adjoining buildings. It has character and characters, as we like to say. We're being polite. It remains a tough, avoided, and forgotten post-industrial neighborhood and our group is trying to rebrand it as vibrant and historic in a struggle to attract new residents and businesses. The demolition of this power plant is going to prompt change and we want to be ready.

So, because of this, I'm standing alone, atop what is technically a massive boiler powering turbines that generate electricity for my city. The reason I'm alone during the tour of this hot, noisy, vibrating building is that I couldn't bring myself to climb the exterior metal staircases to the roof, despite the spectacular view of the Mississippi River Valley. I have vertigo and make a plea to stay behind. The tour guide is kind about it and lets me stay while everyone else goes up. I watch them disappear through a door, relieved that I was spared and anxiously await their return, so we can ride back down the open-cage elevator that brought us here. On the way up, I stared at the floor to avoid feeling dizzy. When the door opened, I stepped out and nearly swooned. The floor was made of steel grating you could see through most of the way down before the grids formed a dizzying moiré pattern. I wasn't prepared for any of this.

The height of the room and the depth below makes me feel small and overwhelmed. I keep my eyes fixed on points near the ceiling while I think about how the plant is going to be demolished soon. I wonder how much maintenance they've put into this place since that decision was made. I don't move about. I'm worried I'll find a weak spot, some rusted steel that will give way and send me plum-



Paulette Myers-Rich, High Bridge Power Plant, 2007

meting. I worry that the stairs they're climbing, exposed to extreme elements for decades, will buckle under the weight of the largest man in the group and I'll be stranded here. I then realize I forgot my cell phone in the car. Frozen in place, I decide to take some deep breaths and look around for a solid area of steel-plated floor I can walk to and wait.

The room has eight tall coal burning boilers in two rows that are heating river water into the steam that powers the turbines. I can choose between moving closer to these boilers, or towards a large, wide-open space in the wall. I walk towards the opening and look out. I find myself facing the spectacular view we were promised. I'm transfixed and forget where I am.

I can see the confluence of the Minnesota and Mississippi Rivers, just upstream. Above on the bluff is Fort Snelling, the limestone military stronghold built in 1819, where officers and soldiers from Eastern states were stationed to guard the new-

ly acquired territory of the Louisiana Purchase of 1803. By 1805 traditional lands were ceded by the Dakota due to federal government pressure. The treaties favored the state and resulted in maltreatment, poverty, and the horrific conditions that led the Dakota into an uprising against the government and settlers in 1862. When the U.S. Army finally put down the months-long revolt, they rounded up all the remaining Dakota, primarily peaceful people innocent of wrongdoing, and put them in an internment camp made up of tipis below the fort at the confluence they called Bdote Mni Sota, where they remained until being forced out of Minnesota forever by vengeful settlers and politicians. Bdote is the sacred site of creation for the Dakota but is no longer controlled by them. It was where they originated and where they lost everything before being forced out. Now within state-owned park property, there is nothing there but trees and a powerline pylon at the point where the waters merge. Bdote Mni Sota is a sacrifice zone.

I shift my gaze from Bdote to the vast coalfield below and think about the community meeting held at our high school a few years earlier. We sat on bleachers in the gym while local politicians and officials from the Public Utilities Commission asked for our input on replacing the coal-fired plant with a newly built natural gas facility. There were jobs at stake, but most who had them didn't live here and we'd been worried about our health and quality of life for years. We were woefully uninformed about fracking at the time and just wanted the coal to go away. My neighbor brought a jar of dirty water to the meeting, held it up for all to see and said, "this is melted snow I scooped up from my front yard and this black soot is what we have to live with every day."

She passed it around for the benefit of the officials who lived outside the area. Her neighbors knew all about the coal dust and how impossible it was to dry laundry on an outdoor clothesline. I thought about how it clogged my window screens and lined the sills, how we came into daily contact with this



Paulette Myers-Rich, High Bridge Power Plant, 2007

poisonous grit. I thought about the 570-foot-tall smoke stack I could see from my kitchen window, the steam visible in the cold winter air, its roiling, mercury-laced plumes spreading far across the sky. Uppertown is a sacrifice zone.

When we first moved to our home on the bluff, we were startled by an eerie sound that echoed through the neighborhood. It was as if a giant beast was breathing heavily right outside our door. I soon learned it was just the steam being released through vents from the plant that you barely noticed when you were next to them walking on the bridge, but the river valley resonated and amplified the sound

so that we could hear it indoors. The power plant was alive with the energy it produced and this was life on the bluff.

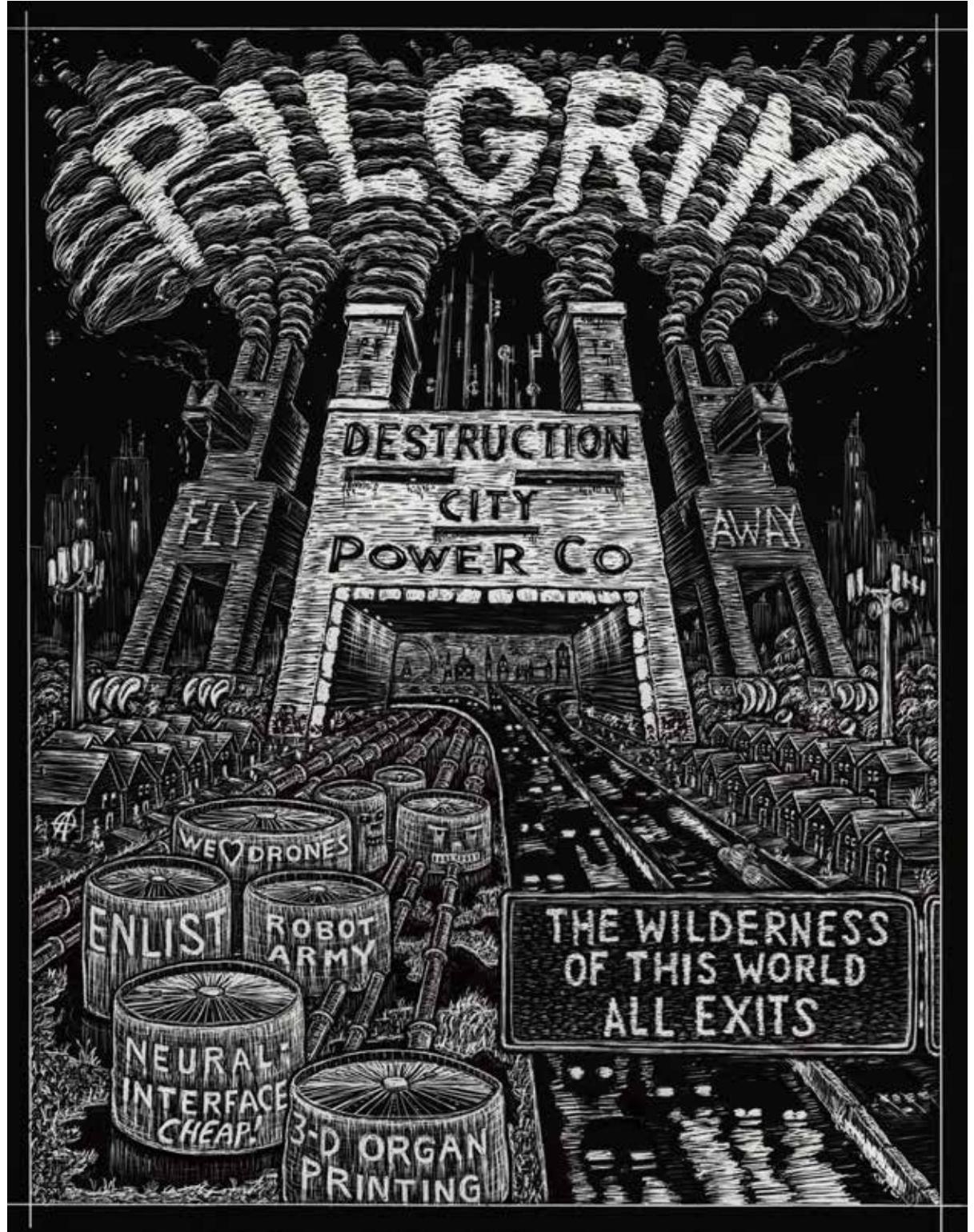
Meanwhile, it's still here, generating electricity and I'm standing on the top floor. The mountain of coal that feeds it is shrinking in size and what's left after the shutdown will be taken away on the trains that brought it. In time, the entire site will vanish and we'll be left with sky and silence. I wonder what it will be like when our windowsills are no longer coated with a layer of grime and we can stay outdoors. But I feel a bit of apprehension about the changes to come. When the sky is free of the smoke stack that signals home from a mile away, will we feel lost? Will things change so much we'll no longer know where we are? There's a bit of grudging love for this industrial structure that holds such prominence in our midst. Some think it's beautiful.

I try to picture the absence of the power plant. I try to imagine

the riverbanks as green and this view of bluffs no longer hidden by the towering structure that gave us heat and light during our long winter days. We know we need the electricity, but our neighborhood had long paid the price those at a distance were spared. We knew no one wanted to buy our homes. We felt stuck and left behind. We're too close to the dirty residue of industry and on the hot, dry days when the wind carried clouds of coal dust up into our yards, we'd go indoors, close our windows, and turn on the fans. It's time to take this place down.



Sara L. Press / Deeply Game Publications, Spectre of Accountability, from the forthcoming artist's book Ghosts in the Machine.  
2013–2019, gouache on matboard



Ralph Sanders, PILGRIM, 2018, scratchboard



From the Library Company of Philadelphia, T. Woodworth trade card ca. 1880

## COAL AND ICE

Andrea Krupp

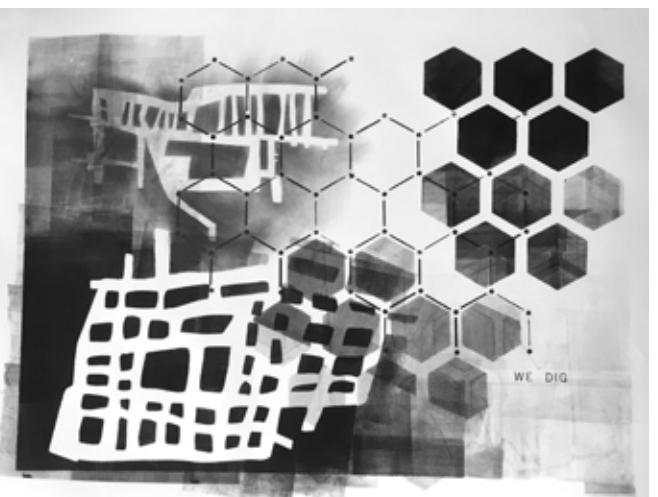
WWW.ANDREAKRUPP.COM

Certain terrestrial materials resonate in the environment, in history and in our imaginations in an especially profound way.

Mountains, standing stones, water, trees, gold—they stun us with their beauty, or strike awe or terror in our hearts. Their arc of existence through millennia, eras and epochs, is humbling. They spark wonder and curiosity. Ice and coal are two such materials, and both are super-charged with meaning at the beginning of the twenty-first century.

Charismatic, mysterious, ancient, fearsome, a glacier sparkles and looms on the horizon. A powerful object in its sheer materiality, glacier's presence in the landscape commands attention and respect. She carries stories and stones from the past, gives place to memory and ritual, carves valleys and spews catastrophic floods. The glacier's form chronicles geological cycles of creation and disintegration, and embodies the passage of time. Until very recently, the word glacier signified slow imperceptible movement and eternal cold. Now we witness glaciers on a rampage, responding to Earth's warming atmosphere.

Trapped inside the hexagonal matrix of the ice crystal, materials like ash and wind-blown dust from the geologic past travel forward in time. Greenland's glaciers catalogue 123,000 years of Earth's history—a frozen glimpse of the mid-Cenozoic era. To breathe in a glacier's vapor is to absorb the off-gassing of geologic time, as minute bubbles of ancient atmosphere fizz and pop into the twenty-first century.



Andrea Krupp, Graphene with room and pillar mines, 2019, carbon black, graphite, stencil, rubber stamp, 19 by 25 inches. Coal is as dark as the glacier is light. From peaty origins, coal slowly refines itself into lignite, then sub-bituminous coal, to bituminous and finally anthracite and graphite.

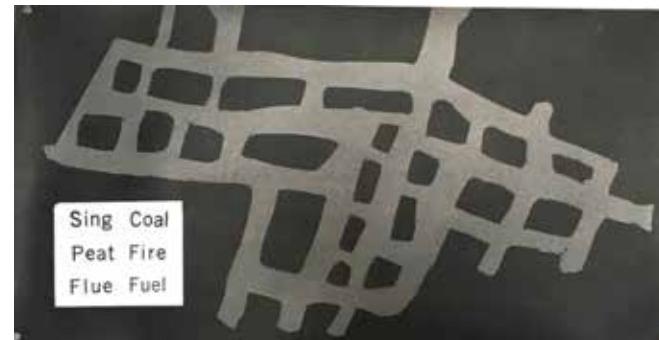


Andrea Krupp, Jokulhlaup, 2016, Graphite, 25 by 38 inches. By creating melt-water and icebergs, the glacier announces its dissolution, and an iceless future.

94% carbon, anthracite is a rare and beautiful material—a dark mirror, dense, glassy, hexagonal and ordered. When nothing else is left but pure carbon, the once waterlogged remains of organic life is called graphite. At the molecular level, graphite is composed of slippery stacks of a two-dimensional nano-material called graphene. Only one atom thick, the hexagonal mesh is invisible to the human eye, but through an electron microscope its materiality, brilliance, symmetry, and scale strike awe. Equally astounding are fullerenes and buckminsterfullerenes, two related expressions of carbon that also exist in the micro scale.

Compared to glaciers, coal carries materials from a past twice as deep. In the making for

300,000,000 years, a lump of coal physically connects us with the remains of organic matter from the Paleozoic era. Like the glacier that effervesces ancient atmosphere when exposed to air, the coal bed off-gasses the byproducts of its transformation. These gasses, aka damps, can suffocate lungful bodies, or kill by violent blast.



Andrea Krupp, *Page from "Coal and other four letter words"*, 2019, artist book, graphite and carbon black, hand stenciled, 6.5 by 13 inches. To stand inside a tunneled-out coal vein in the anthracite fields of Pennsylvania is to witness coal-human entanglement first-hand.

Tunnels blasted through solid rock to reach the veins of softer coal, and silica dust and powdered carbon settled deep inside miners' lungs. The mine is an anti-human realm of silence, darkness, water and time. Over centuries, coal mining families sacrificed health and well-being. Hundreds of thousands of coal miners were exploited and maimed or killed. Yet the concept of workers' rights and workers' unions sprang up from their struggles. We dig. Soot on ice darkens the planet and carbon dioxide accumulates in the atmosphere, heating us, the Earth, and melting glaciers.

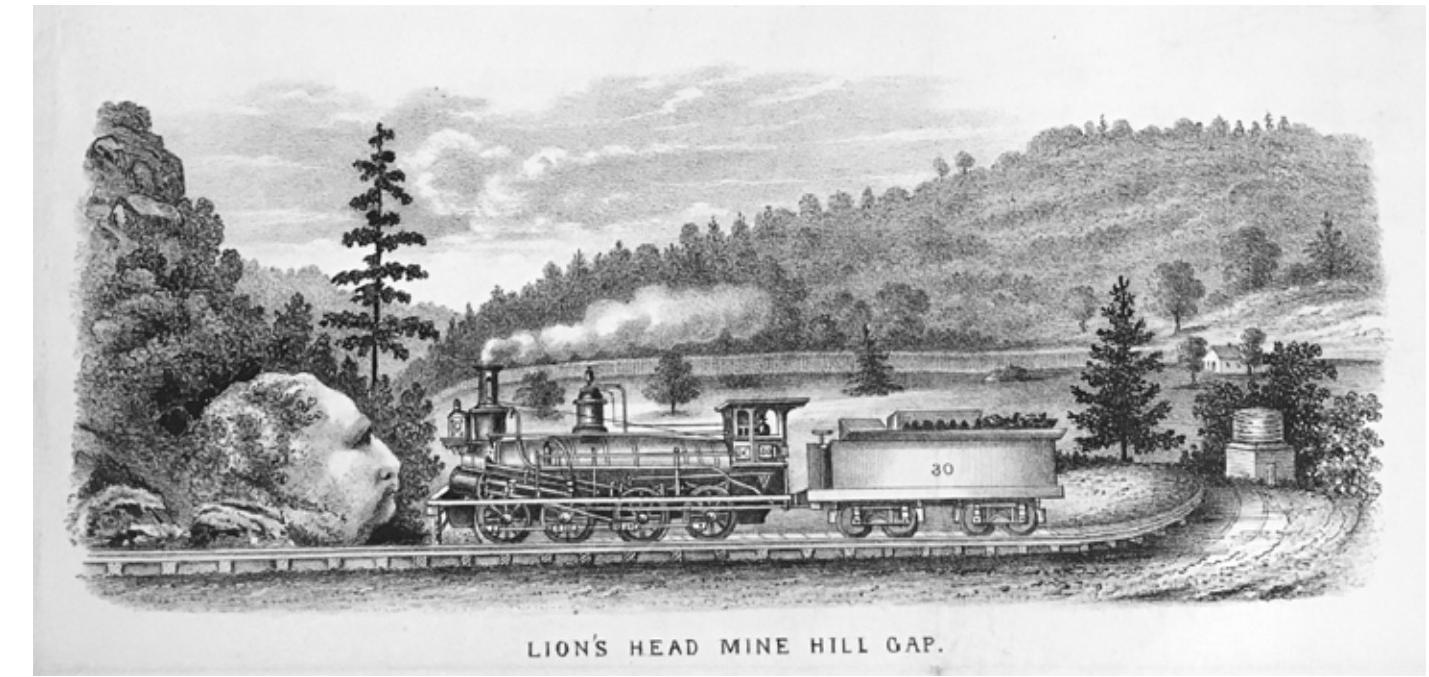
Certain materials possess a kind of charisma that sparkles in the gap between self and other, human and non-human, animate and inanimate. Our curiosity lights up and causes us to stop, to observe, to learn, and the boundary between self and other thing grows porous. When we investigate with wonder, patience and humility, we connect with materials, things and beings of the world. Coal, glaciers, and humans all move through time on vastly differ-



Andrea Krupp, "IAMALLBOG", 2018, hand stenciled carbon black acrylic, 25 by 19 inches. Coal is in us and of us. We are peat, we are coal.

ent cycles of generation and disintegration, and intersect, miraculously, in the here-and-now.

Thinking through coal and ice, and all of Earth's materials, helps us re-calibrate our own sense of belonging within the vast planetary system of which we are a part, and on which everything depends.

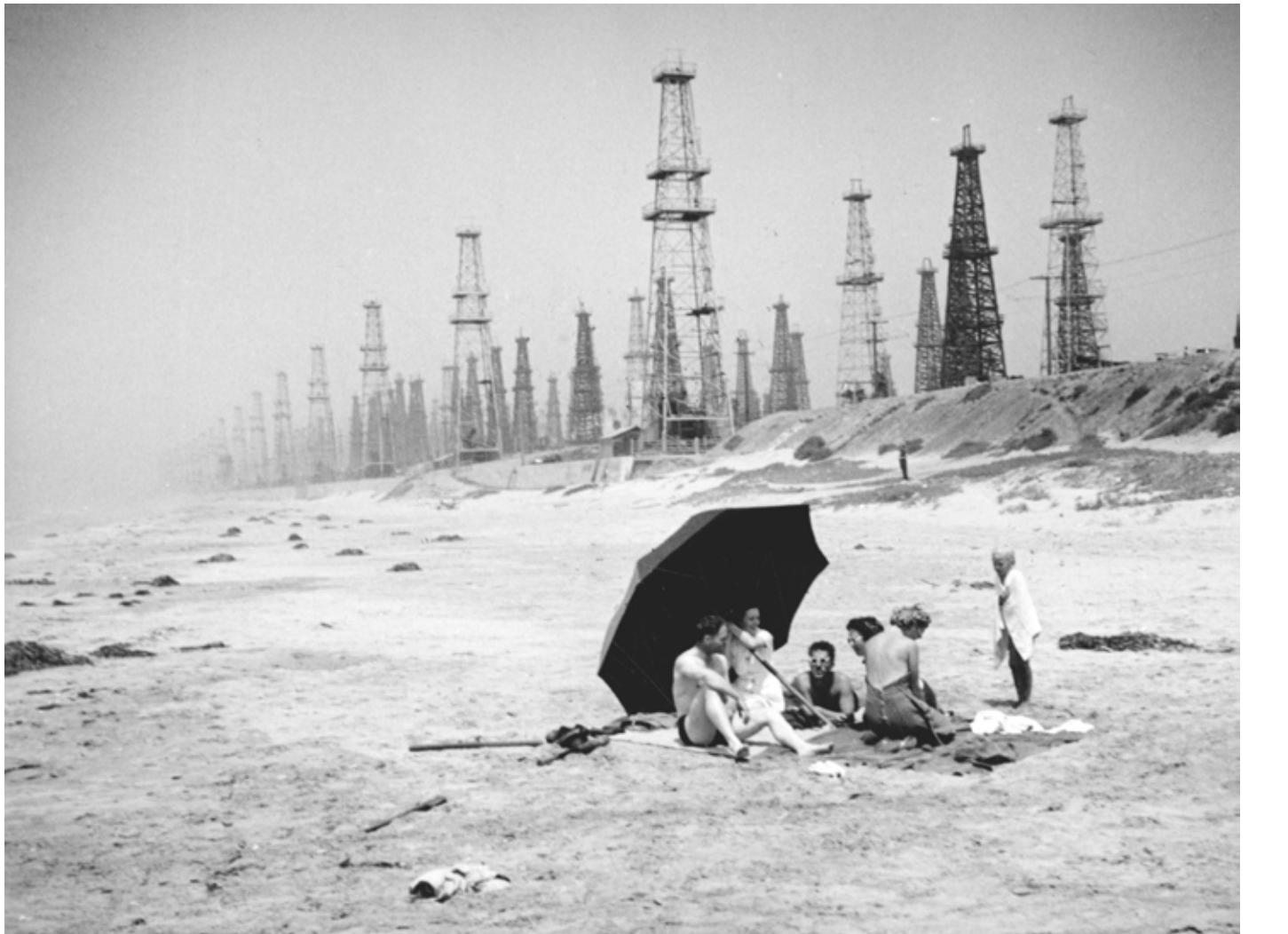


LION'S HEAD MINE HILL GAP.  
From the Library Company of Philadelphia, detail from "Map of the Mine Hill and Schuylkill Haven Rail Road and Branches", Philadelphia, 1861



"THE MORE CLEARLY WE CAN FOCUS OUR ATTENTION ON THE WONDERS AND REALITIES OF THE UNIVERSE ABOUT US, THE LESS TASTE WE SHALL HAVE FOR DESTRUCTION."

—RACHEL CARSON



Above: Shore and oil field in Huntington Beach, ca. 1937 by Herman Schultheis, Herman J. Schultheis Collection, Los Angeles Public Library; Previous page: Garth Lenz, Tar Mine and Roads, Northern Alberta, Canada, 2010, photograph

## EXTRACTION AS THE GREATEST EMERGENCY

### A PHILOSOPHICAL CONTRIBUTION TO EXTRACTION: ART ON THE EDGE OF THE ABYSS

Santiago Zabala

Among the many contributions of postmodern thought—devoted to disclosing the interpretative nature of existence—is that art, like science and politics, is inevitably a response to its own epoch. Its discoveries and intuitions are conditioned by the historical events that artists have experienced throughout their lives. Their work can also be understood as a consequence of the various challenges and opportunities these events present. But art, unlike science and politics, always involves a critical element meant to stir our existence. This element might be identified after the fact in scientific breakthroughs or political revolts, but it seems to be constitutive of works of art independent of the frames, hierarchies, and rules of the art world. The point is not that scientists and politicians aren't free but rather that their works are more framed by economic and political systems of rule than those of artists, the success of whose work depends on finding such freedom despite the systems that seek to frame and tame expression.

This freedom is particularly evident in the Extraction project, which discloses the emergency of natural-resource extraction through installations, performances, and exhibits throughout the world. The different works of art in this multimedia and cross-border intervention are not meant only to disclose an environmental emergency but also to thrust us into the greatest emergency we face today.

The greatest emergency today—as I explain in *Why Only Art Can Save Us: Aesthetics and the Absence of Emergency* among other publications<sup>1</sup>—are those emergencies we ignore, overlook, or reject from the

arena of action. This does not imply that the world is not full of emergencies—we hear of them and watch government responses every day. Rather, the greatest emergency today is the ignored causes and origins of these emergencies. The greatest emergency is the *absence of emergency*, that is, the status quo, the normalization of disaster.

Extraction is a paradigmatic example of how an emergency becomes an absence. Natural resources are now being extracted from the planet three times faster than in 1970 even though the global population has only doubled in that time. Extractive industries are responsible for half of the world's carbon emissions and more than 80 percent of biodiversity loss, but while individual occurrences are mourned or even fought, the whole is rarely addressed as an emergency at all. This is currently evident in Australia, the sixth-biggest producer of fuels that release carbon, whose emissions are expected to double by 2030, independent of the ferocious wildfires that struck the country at the beginning of 2020.<sup>2</sup> The greatest emergency is not carbon emissions, biodiversity loss, or the fires in Australia—although these are dramatic consequences—but rather how natural-resource extraction (the cause of these emergencies) is predicted to increase.

If, as the German poet Friedrich Hölderlin said, “where the danger is, also grows the saving power,” then we must find ways to experience the danger hidden in the greatest emergency. Art practices can thrust us into absent emergencies. This is evident in the ongoing turn from “relational” to “emergency” works of art or aesthetic theories and in artists’ inevitable participation in global matters. Although the art world, like scientific and political institutions, is a system with hierarchies and frames, it has been affected by globalization in a different way, one that through actual exchange lets works emerge for different purposes and in unusual settings.

This is clear in the different experiences of art in art fairs and in biennales: in the rigid art fairs, the viewer contemplates valuable objects, but in



Vicky Sambunaris, Untitled (Power plant), Huntington, Utah 2017, C-print

the biennales the members of the audience all take responsibility for a collective experience. As Caroline Jones recently explained, it “is the emphasis on events and experiences, rather than objects, that constitute[s] the surprising legacy of biennial culture.”<sup>3</sup> The fact that the latest trend in biennales, which have increased markedly in these past decades, is to offer these experiences in such remote places as Antarctica and the Californian desert is an indication that globalized art demands global interventions from artists and audiences as the Extraction Project proposes. The “globalization of the art world,” as Arthur Danto once said, “means that art addresses us in our humanity, as men and women who seek in art for meanings that neither of art’s peers—philosophy and religion—in what Hegel spoke of as the realm of Absolute Spirit, are able to provide.”<sup>4</sup>

The artists who seek to expose these meanings today are the ones whose works demand our intervention in masked and hidden global emergencies, emergencies that are concealed in the idea of their absence. This is evident in Mary Mattingly’s installations, Victoria Sambunaris’s photographs, Ann Lewis’s interventions, and the work of others artists featured in this catalogue together and in the various events that will take place during the summer of 2021. The goal of these works is not to rescue us from emergencies but rather to rescue us into absent emergencies, an absence into which the planet’s natural resources are disappearing. Only art can still produce works, as the organizers of this project said, that “disturb the collective oblivion that makes possible our suicidal cultural contract regarding extractive industry.” With science and politics part of



Ann Lewis & BAMN, TIXE, abandoned hotel, 2014, intervention/installation

the problem and art sounding the call, it’s up to us to interpret and intervene accordingly.

SANTIAGO ZABALA is a philosopher and cultural critic and ICREA Research Professor of Philosophy at the Pompeu Fabra University in Barcelona. He is author of many books, including *Why Only Art Can Save Us: Aesthetics and the Absence of Emergency* (Columbia University Press, 2017) and *Being at Large: Freedom in the Age of Alternative Facts* (McGill-Queen’s University Press, 2020). His opinion articles have appeared in the Guardian, the New York Times, and Al-Jazeera among other international media outlets.

#### NOTES

1. Santiago Zabala, *Why Only Art Can Save Us: Aesthetics and the Absence of Emergency* (New York: Columbia University Press, 2017); and *Being at Large: Freedom in the Age of Alternative Facts* (Montreal: McGill-Queen’s University Press, 2020).

2. Jonathan Watts, “Resource Extraction Responsible for Half World’s Carbon Emissions.” *The Guardian*, March, 12, 2019, <https://www.theguardian.com/environment/2019/mar/12/resource-extraction-carbon-emissions-biodiversity-loss>; and Isabella Kwai, “Australian Coal Company Says Bush-Fire Smoke Is Slowing Production,” *New York Times*, January 21, 2020.

3. Caroline A. Jones, *The Global Work of Art: World’s Fairs, Biennials, and the Aesthetics of Experience* (Chicago: University of Chicago Press, 2017), xiv–xv.

4. Arthur Danto, *Unnatural Wonders: Essays from the Gap Between Art and Life* (New York: Columbia University Press, 2006), xvi.

## THE TRUE COST OF OIL

Garth Lenz

WWW.GARTHLENZ.COM

The images in this portfolio are drawn from my larger traveling exhibit, *The True Cost of Oil*. The following artist statement is from that exhibit:

*The True Cost of Oil* exhibition is a comparative study of the Alberta Oil Sands and the surrounding boreal forest. These contrasting subjects serve as a visual metaphor of the cost of our ongoing consumption of fossil fuels.

The boreal forest ecosystem is the world's greatest terrestrial storehouse of carbon and Canada's boreal forest is considered the largest and most intact forest remaining on Earth. In the middle of this ecosystem lie northern Alberta's Oil Sands, the world's third largest oil reserves and its largest energy project. They are also possibly the most visually compelling example of all that is wrong with our consumption of fossil fuels while at the same time offering stunning opportunities to make images of great scope, power, and variety.

Making extensive use of aerial photography, *The True Cost of Oil* includes images of vast tar mines, tailings ponds, and refineries, as well as some of the world's largest wetlands and remaining tracts of forest. My approach includes images of pure abstraction as well as those of a more documentary approach. The inherent beauty in many of the images of industrial devastation is often at odds with our preconceptions of this subject matter while reflecting our complicated relationship with fossil fuels; while we lament the negative impacts of fossil fuel extraction, we continue to enjoy their benefits.

*The True Cost of Oil* explores the power of nature, our power to transform the landscape on a previously unimaginable scale, and most importantly, the risks we are willing to take and the sacrifices we are willing to make to meet our demands for carbon-based energy. It is my hope that this exhibit will invite viewers to consider the true cost of our dependence on fossil fuels.



Garth Lenz, Tar Mine and Roads, Northern Alberta, Canada, 2010

The Alberta Tar Sands (or Oil Sands) represent the world's third largest proven oil reserves. They produce more carbon than traditional oil reserves. This is compounded by the fact that the production of this resource requires the removal of the boreal forest ecosystem, one of the world's most effective terrestrial carbon sinks. The Tar Sands also border on the Peace Athabasca Delta, a Ramsar designated wetland and Unesco Cultural Heritage Site considered the world's largest freshwater delta. Lying at the junction of all four of North America's migratory bird flyways and the last refuge of the largest remaining wild herd of bison, it is being critically impacted by pollution and water withdrawals from the tar sands. Toxic pollutants are also found in the wildlife and neighbouring indigenous communities are showing elevated rates of cancer. The proposed full exploitation of the tar sands would industrialize an area the size of Florida. NASA climatologist Dr. James Hansen has noted that the GHG emissions caused by extensive extraction of the Tar Sands oil would essentially mean "game over for stabilizing the global climate."

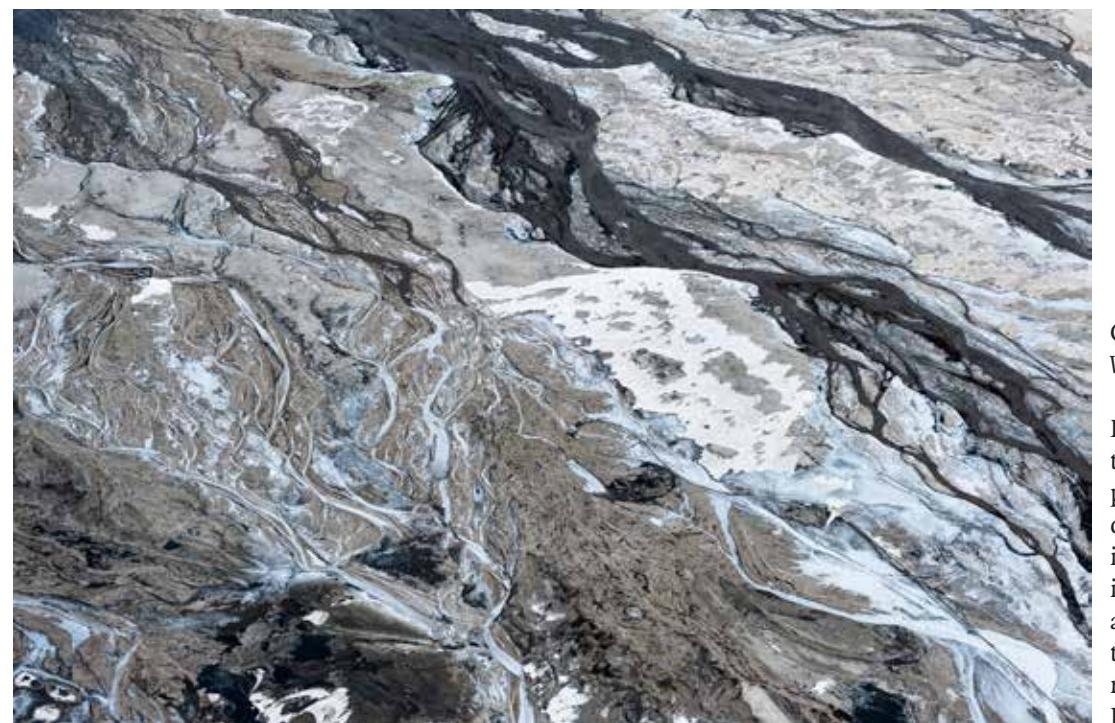
Garth Lenz, MacKay River, Boreal Forest, and Tar Mine, Northern Alberta, Canada, 2010

The boreal forests and wetlands that surround the Tar Sands are the most carbon rich terrestrial ecosystem on the planet, holding almost twice as much carbon as tropical rainforests. Referred to by the tar sands industry as "overburden," these forests are scraped off and the wetlands dredged, to be replaced by tar mines like this.



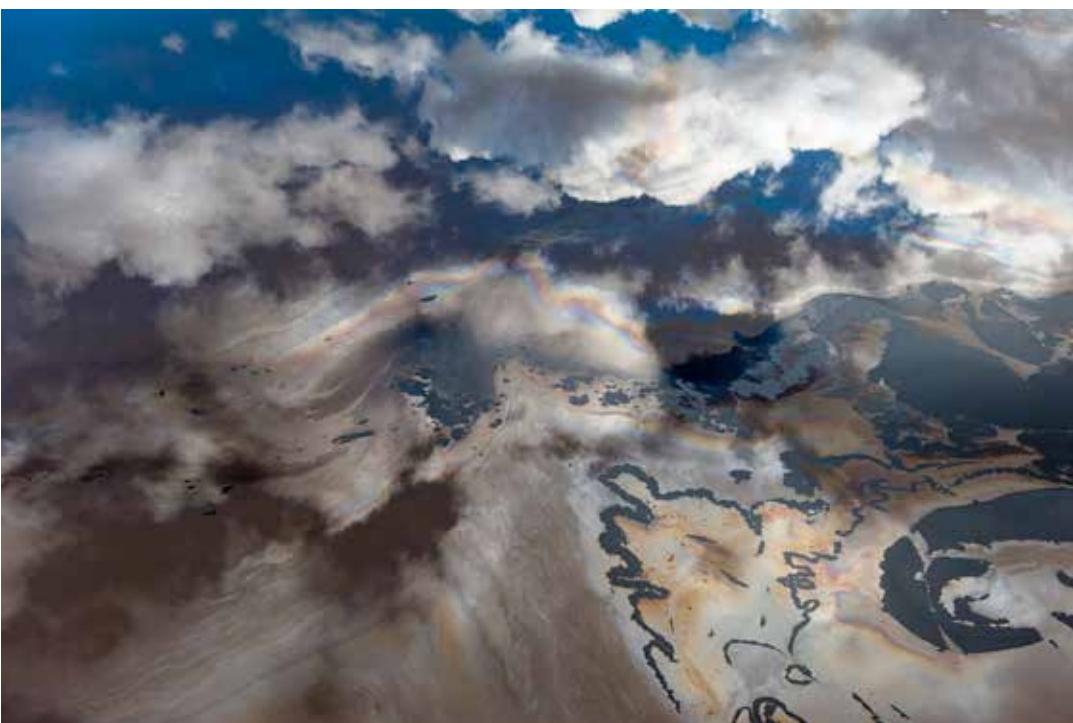
Garth Lenz, Tar Sands Upgrader in Winter Northern Alberta, Canada, 2010

The Alberta Tar Sands are Canada's single largest, and fastest growing, source of carbon. They produce about as much carbon annually as the nation of Denmark. The refining of the tar-like bitumen requires far more water and energy than the production of conventional oil and produces significantly more greenhouse gas. Nikon D3, Nikkor 24-70 f2.8. Shot at ISO 800, 24mm, 1/8000 at f4.5.



Garth Lenz, Tailings Pond in Winter, Abstract #2, 2010

Even in the extreme cold of the winter, the toxic tailings ponds do not freeze. On one particularly cold morning, the partially frozen tailings, sand, liquid tailings and oil residue, combined to produce abstractions that reminded me of a Jackson Pollock canvas.

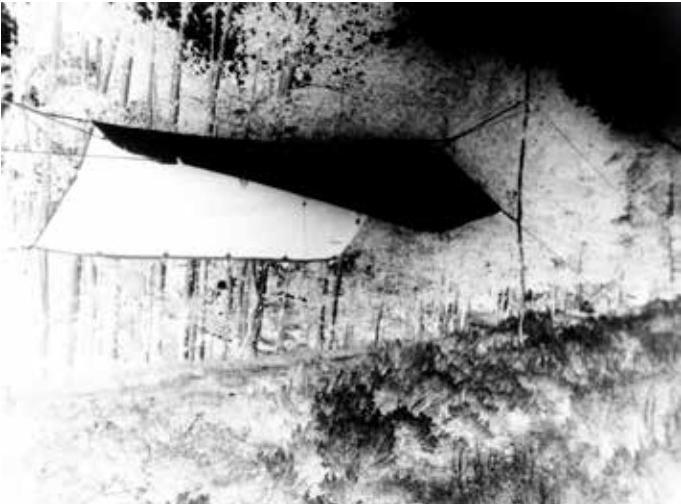


Garth Lenz, Tailings Pond Abstract #2, Alberta Tar Sands, 2010

So large are the Alberta Tar Sands tailings ponds that they can be seen from space. It has been estimated by Natural Resources Canada that the industry to date has produced enough toxic waste to fill a canal 32 feet deep by 65 feet wide from Fort McMurray to Edmonton, and on to Ottawa, a distance of over 2,000 miles. In this image, the sky is reflected in the toxic and oily waste water of a tailings pond.



Jason Livingston, film stills from *Ancient Sunshine*



## ANCIENT SUNSHINE

Jason Livingston

*Ancient Sunshine* is an experimental documentary in the essayistic tradition that explores extraction and climate defense in the American West.

*"We discovered coal, the genie in the Earth. Now we live off ancient sunshine (coal, oil, gas), which has made possible the extraordinary expansion of our population. We have to return to a life based on contemporary sunshine."*

—Joel Achenbach

When I first learned of the tar sands mine operation in remote Utah, I was alarmed. How could there possibly be tar sands in Utah? How could anyone, given the horror show of the Athabasca oil sands in Alberta, Canada, consider replicating extraction like that here at home? And then my horror turned to inspiration. I learned of a small group of environmental activists who for half a dozen years have protested the exploratory mining operations. Every year, following the snowmelt, and continuing to the turning of the leaves, they build a resistance camp within sight of the mine.

*Ancient Sunshine* consists of interviews with the Utah Tar Sands Resistance primary organizers and other Utah land protectors, and sets their voices in and against an extractive landscape. The film draws on other voices and sources, too, to complicate ideas of resistance and kinship during times of extinction. *Ancient Sunshine* proposes, through its formal operations and poetry, a solidarity of inter-dependency, across history, across geography, across species.



Jason Livingston, film stills from *Ancient Sunshine*



Eric Zhang, Source, 2019, digital photograph



Eric Zhang, Storage Tanks, 2018, digital photograph



Eric Zhang, Martinez Refinery, 2019, digital photograph

## THE MARTINEZ REFINERY

Eric Zhang

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The Martinez Refinery, which traces its roots to 1913, was the first modern refinery to be built in the United States, and today it remains the largest refinery in the San Francisco Bay Area. Its 177 mile-long pipeline extends from California's Central Valley up to the refinery, weaving through numerous neighborhoods, reservoirs, and agriculture fields. Shell owned the refinery until 2019, when they sold it and its related facilities to an independent refining company. I live near the Martinez Refinery, and only became aware of the pipeline after noticing the pipeline markers, which I followed to their source. This series investigates and informs the public about the pipeline and the Martinez refinery through photography, video recordings, and interviews with residents of nearby neighborhoods. My work seeks to expose the destructive influences the pipeline poses to the land, as well as the harmful living conditions communities endure at the hands of a threat that remains invisible to most.



Kim Steele, Oil Platform, Jacket Cerveza, New Orleans, photograph, Kim Steele Photography, Getty Images, San Francisco



Kim Steele, North Sea Rig 87088, #3, photograph, Kim Steele Photography, Getty Images, San Francisco



Kim Steele, Oil Shipping Pipelines, Arthur Kill, Staten Island, photograph, Kim Steele Photography, Getty Images, San Francisco

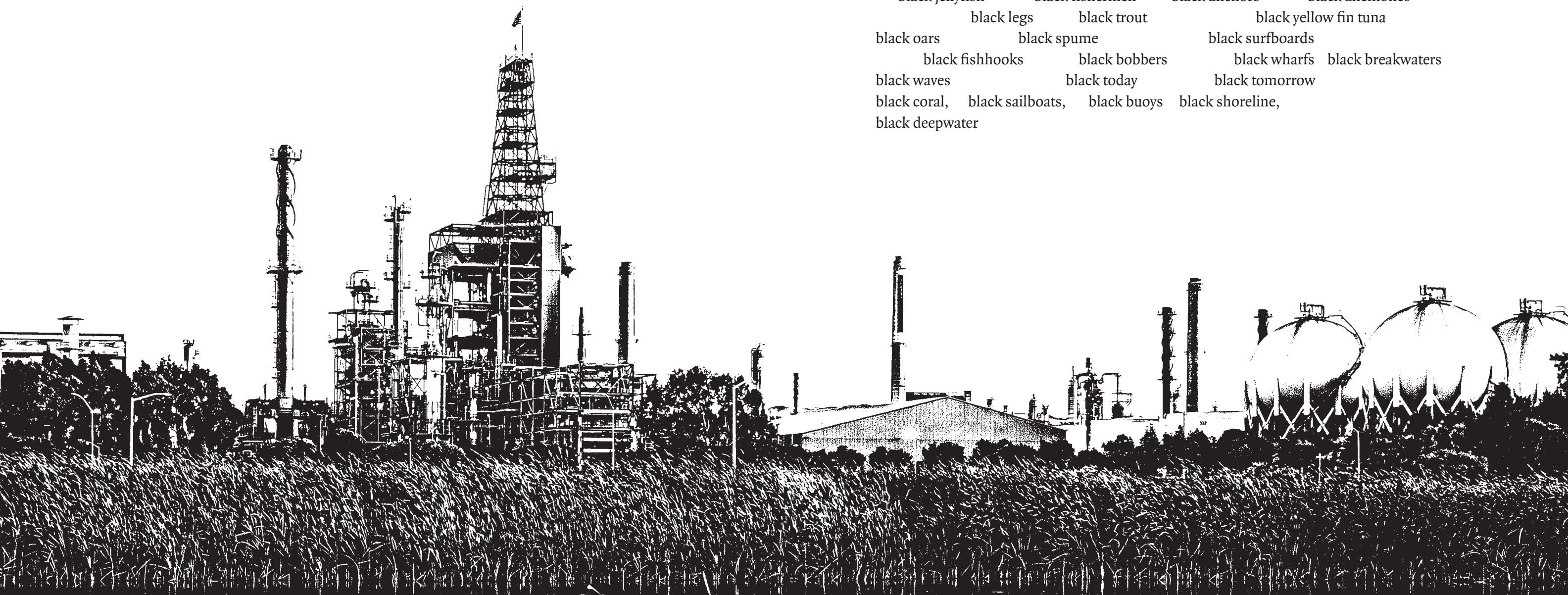


Kim Steele, Roughnecks, Oil well drilling, Texas, photograph, Kim Steele Photography, Getty Images, San Francisco

# BLACK GOLD

CB Follett

Black horizon      black water      black beaches,      black crabs,  
black oysters      black flounders      black scud      black nets  
black surf      black sand dollars      black seaweed      black sand crabs  
black sandpipers      black shoreline      black pelican      black feet  
black rocks      black tides      black globs  
black dunes      black egrets      black sanderlings  
black keels      black beaks      black wings  
black clams      black seagulls      black coots  
black boots and gloves      black gold      pouring out      black shrimp empty nets  
black finned tuna      black herons      black bellies  
black jellyfish      black fishermen      black anchors      black anemones  
black legs      black trout      black yellow fin tuna  
black oars      black spume      black surfboards  
black fishhooks      black bobbers      black wharfs black breakwaters  
black waves      black today      black tomorrow  
black coral, black sailboats, black buoys black shoreline,  
black deepwater



## CAN WE HOLD ONTO THE EARTH

CB Follett

Each day the sun throws down  
fiery fingers and grabs  
the corn from the ground, but we  
dance on. Giant slabs

slide like dead men off the ice shelves  
and melt into the great  
shrugged shoulders of the sea  
but we are far away  
and don't blink

Polar bears can no longer swim  
enough to get home  
as their frozen islands shrink  
but we have zoos and bears enough

Huge whirlpools of wind  
rise up and smash the land  
but those are poor people  
and we turn away

Men sleep on sidewalks  
women too in doorways  
children huddle long and low  
In street life lie others

their cars, now towed or sold  
for a few more meals  
We have doors and hearths  
yet feel helpless

It's all too much. We are too many  
The Earth we can only hope  
is resilient We must all hang tough  
Reach out. We must all hold on

## MIGRATION

CB Follett

Across our sun soaked sands,  
our oceans, a billion people  
are moving, always moving –  
towards, away, with little  
in their pockets, nothing  
on their backs.

The trails are old, scuffed  
by the feet of ancestors.  
Where they lived  
is parched, war torn, cyclonic.

They travel by callused foot,  
by broken down camel,  
donkey, wagon, over-  
crowded boat. They must

shed and leave behind,  
they must abandon the sick,  
the falling, the dead. They  
have paid everything they had,

money, clothes, pails, baskets.  
With nothing left, they keep  
walking, keep their eyes on  
on hope, on an horizon unknown.



KB Jones, Well, 2018, watercolor and ink on paper, 45 by 64 inches

## THE PERMIAN BASIN

KB Jones

[www.kbjones.com](http://www.kbjones.com)

The Permian Basin lies in Southwest Texas and the bottom right corner of New Mexico. Sitting a bit north of it is a small ranch that my great grandfather pieced together for grazing his cattle. Today, my father and his sister lease this property out to a rancher, a hunter, and an oil company. While our ranch produces a relatively small amount of crude, great pride in the oil industry runs through the area. There is a thriving economy surrounding it and everyone is happier when there are more jobs and more money.

I became particularly interested in the oil industry after reading a New Yorker article claiming that the Permian Basin was arguably, “the hottest oil and

gas play in the world.” The oil boom that this part of the country is experiencing is due to the “fracking revolution,” which is coinciding with the Trump administration’s loosening of regulations.

My paintings began with a trip to this part of Texas and New Mexico. I did not look at the oil and gas industry exclusively. From there, I visited sacred places for my family, like my grandfather’s ranch and the small town of Spur, Texas where my Grandmother Betty grew up. I went to Marfa and visited the Chinati Foundation. I went to two National Parks and saw friends in Las Cruces and Carrizozo. In my diary I wrote, “Some of the nicest and friendliest people that I have met. Charming small towns and hardworking people.”

The paintings that resulted from this trip are not a scientific investigation in any sense. They reflect my subjective experience of looking at a landscape



KB Jones, Halliburton, 2018, watercolor and ink on paper, 30.5 by 45 inches

and a region that I love. I made paintings that attempt to tell a complicated story, one that both honors the place and the people, while revealing my own concerns and anxieties. The U.S.’s border with Mexico lies just to the south and it looms heavy, behind everything. These paintings are not only about a place, they are about complicated emotions and fractured perception.

Rather than oil on canvas, I am painting in watercolor on paper. Traditionally, watercolor has been taken less seriously, sometimes considered a “hobbyist’s” medium best left to women at home rather than the men in their studios. The workers in the oil patch are predominantly male, and as a female and a tourist, I did not feel welcome to explore any of the heavy industrial sites. The machinery is immense. The scale is non-human. I wanted to depict powerful industry by using a light and delicate me-

dium, as well as a very human scale. Water itself is a huge and contentious issue in hydraulic fracturing. The process uses tons of it, in a desert that has very little. Conservationists worry that the process risks damaging the water table. Skies and clouds, which reflect the moisture content in the air, were particularly fun to paint in watercolor, which, compared to oil, has little body or weight to it. I spread paper out on the floor of my studio and worked from above where I could control the pooling of the paint. I often started by taping out the horizon line because in the wide open spaces of the Southwest, everything rests on the horizon. Beginning from there, I might go on to depict a car window, a frack waste pond, a leaky pipe.

When I wanted to paint something that seemed more complicated or dense, I used gouache, which unlike watercolor is opaque. I painted one of the



KB Jones, *Jacy in The Last Picture Show II*, 2018, watercolor on paper, 9.25 by 12.5 inches

many towers of cases of plastic water bottles that were for sale in a gas station in Pecos. At the center of the oil patch, Pecos is surrounded by fields of RVs that house the oil field workers. The men working in the field need to stay hydrated, as summer temperatures are typically well above 100 degrees. As one oil field worker told me on my flight back to Houston, he often goes through a case of bottled water a day. I used gouache to paint one of the many billboards in the Midland airport that advertised something related to the oil and gas industry. Passengers wait in front of a billboard that advertises "SmartSand" from Wisconsin, for all your hydraulic fracturing needs.

In this series of paintings, there is a focus on trucks and the experience of driving. Trucks, windows, and windshields became a major part of my paintings because they were the vehicles (or lens) through which I saw everything on this trip.<sup>285</sup>, which is one of the main roads used to carry supplies to the oil fields is called Death Highway by the locals. In 2017, ninety-three people died from accidents involving trucks on the highway—on the Texas side alone. In order to travel in that area and see what I wanted to see, I had to drive, relying on gas whose production I was investigating. I used washes of sumi ink to depict the interior of the vehicles. The inked windows often become the frames

through which one views the landscape. I also used ink to paint glazes and washes in areas that seemed dirty or smoggy from heavy production. I connected these landscapes to my own interests in art history and display, which is why I attempted making paintings using a long vertical format. I layered and stacked images of the area, using ink washes like strata. The stripes started to look like rocks, mines, geological maps or diagrams. Rather than depict the horizontality of the place, I wanted to show a sense of time and history going down deep like roots.

Halliburton's logo was a common site in the Permian. However, I believe that there are other connections between the oil industry and America's military efforts. Like our recent efforts in the Middle East, groups of predominately male workers travel to remote sites, living and working together amidst heavy and dangerous machinery. The process of hydraulic fracturing itself is violent, as literally tons of water, sand, and chemicals are shot down deep into the earth, and the landscape itself is similar to the Middle East. Traditionally, Texas has symbolized a lot of what we imagine America to be: the independent spirit of the frontier. But so much of the old west is a myth that has been passed down from Hollywood. The great Texan author Larry McMurtry explores the connection between mind and landscape, and he often writes of depression with intermittent highs, mimicking the boom and bust cycles of Texas' oil industry. In the movie based on his book, *The Last Picture Show*, Cybill Shepard plays Jacy. She is young and beautiful. But, not unlike oil, beauty will not last forever, and America's obsession with both is perhaps shortsighted.



KB Jones, *Pecos Gas Station*, 2018, watercolor and ink on paper, 27 by 25 inches



Christopher Benson, *Maybe, Maybe Not*, 2018, oil on panel, 24 by 24 inches

## ART AS ACTION:

### CONCERNING ART AS A TOOL OF POLITICS AND PROTEST

Christopher W. Benson

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The reader should know at the outset that I am a painter. And because painting is the kind of art I know best, what follows mainly concerns that medium. That said, the general principles outlined here could equally be applied to poetry, prose, theater, photography, film, video, or any other creative path a person might choose to take up. Indeed, I tend to experience all those different kinds of art in much the same spirit in which I experience a painting.

Although I wholeheartedly support, and indeed am pleased to be a participant in the Extraction Project, I have always been dubious about art's effectiveness as a tool of political change. The simplest way to put it is that, for me, politics is a way to speak to others about how we think the world *should be*, whereas art is more a matter of allowing the world to speak through us about how it is. One approach is outward and instructive, and the other is inward and receptive, notwithstanding that both are forms of communication.

This is not to say that powerful statements of protest cannot be made through art; they often are. I think immediately of Turner's *The Slave Ship*, Käthe Kollwitz's etchings on *The Peasant War*, or Picasso's epic painting *Guernica*. But what all those works also have in common is that their makers were probably more interested in recording the emotional power of their own responses to the events depicted, than in attempting to tell us viewers precisely what or how we should think about them.

This is not, however, how much of today's art is made. Thanks to the overlapping ideas of the postmodern and deconstructive theories, two generations of artists have now lived their whole working lives in an often highly politicized art world. These

ideas coalesced around artistic thinking and practice in the late twentieth century with the aim of dismantling a variety of, mainly western, cultural assumptions, tropes and biases—from matters of personal, group, or gendered identity, to the impacts of colonialism and more general cultural, economic, or political critiques. This approach took hold in the 1980s and 90s and was then taught at colleges and universities throughout the subsequent decades. The more aesthetic ideals of Modernism (the correlation of the physical qualities of a work to its meaning and value) have made a return in recent years. Even so, the deconstructive mindset persists as an underlying set of norms for much contemporary art. Given the wide proliferation of these ideas, many artists now (not to mention critics, historians, curators, and educators) seem unaware that "serious" art can be anything else but politically or culturally critical—so much so that if a work does not contain some critical or otherwise politicized message, it is considered by many engaged in the world of art, not to be art at all.

It can be discouraging to "fight city hall" as they say. This is how the art of our time is made. It is no less a normative ideology of the contemporary western art world—and now, by globalized extension, of the rest of the world as well—than existed in past ages when other ideologies (whether ecclesiastical or academic) determined what kinds of art society would most encourage and support. And yet, there are always some who do not quite embrace the zeitgeist of their historical moment. Many painters working today have either hung onto, or else re-embraced, the ideas that their art's defining qualities are aesthetic and physical rather than purely ideological, and that its meaning can be revealed intuitively, through the physical act of painting, rather than conceptualized beforehand as a narrative requiring explicit illustration.

There is an old tension between these different ways of working which is, somewhat misleadingly, traced back to the dawn of European Modernism in

the mid-nineteenth century—the point at which the genesis of today's deconstructionist line is thought by some of its champions to have occurred. Seeing their approach as a foreordained evolutionary consequence of the Avant-Garde rejection of classical aesthetics, they presumed that a wholesale rejection of all aesthetic art was the inevitable, even desirable, outcome of that revolution. This was demonstrated to me when I returned to art school in my mid-twenties to complete a previously abandoned degree. We were taught in our art history class then that the early Modernists—Édouard Manet in particular—launched the deconstructive line when they rejected the historically-themed classicism of the French Académie and Salon, in favor of a more direct contemporary critique. In this telling, socially provocative works, such as Manet's *Olympia*, or *The Execution of Emperor Maximilian*, laid the foundation for the conceptualism of Duchamp and the Dadaists. From there the line lead inexorably to Andy Warhol, to the triumph of critical philosophy over art, and to the inevitable “end of art history.”

That is a very different story from the one I learned as a younger man at the same school in the late 1970s, when early Modernism was presented as an aesthetic revolution—yes, away from classical naturalism, but towards the non-objective, and in some cases even spiritually transcendent expressionism of American abstraction. In that telling, first Gustave Courbet, and later all the Impressionists as a group, abandoned the biblical and historical content of academic painting for a grittier realism, coupled to sensory and tactile (later termed “plastic”) experiments with color and surface. The major figure at the head of that charge was not Manet at all, but Paul Cézanne. It was Cézanne's carefully examined color relationships, his rough edges and broken surfaces, which led into the fragmented Cubist imagery of Picasso and Braque (Picasso once even referred to Cézanne as “the father of us all”), and thence into the acutely distilled pure abstraction of de Kooning, Rothko, Frankenthaler, and Pollock. Henri Ma-

tisso's and Pierre Bonnard's formal innovations and saturated colors also influenced that line, as well as the semi-abstracted Bay Area representation of painters like David Park, Richard Diebenkorn, Elmer Bischoff, and later, Wayne Thiebaud. It was only when the Postmodern factions overthrew the high minded aesthetics of mid-century Modernism, that the alternate concept-driven lineage I heard in my later college sojourn was proposed. “This is why we do not talk of Cézanne but of Manet,” my instructor announced in the fall of 2004. Pissarro, Monet, Cassatt, Morisot, and Degas, as well as Seurat, Matisse, and Bonnard, were completely unworthy of mention. And only Pollock among the New York painters rated a nod. The message could not have been more clear: “In the new order, none of that will be considered art!” Sadly, when put in curatorial service, this mindset can impoverish and misrepresent a wide range of both Modern and pre-Modernist art. Desensitized to the subtle, deeply historically layered languages of aesthetically made things, art historians educated in the Postmodern era project the contextualizing language of critique backward onto works made in a completely different tongue, alternately condescending to them as unsophisticated, or simply pretending they never existed.

The problem with both these art historical trajectories—the transcendently aesthetic on the one hand, and the transgressively culturally critical on the other—is that each is only a piece of a whole organism in which there were in fact a great many other moving parts. Like the tail or trunk of the elephant that is respectively grasped by the proverbial blind men, these were, at best, fractional views that justified the narrow ideological prejudices of those who advanced them. The broader reality of the Modernist century that unfolded between the height of Impressionism and the end of the Vietnam War, is that it was, on the whole, a period of profound non-conformity and resistance to institutional thinking—or really to any firmly articulated “correct” way of making art. It

was an individually driven free-for-all: a time when myriad diversely branching tributaries sprang up and flowed in radically different directions from one another. Even within those many branches, individual artists found distinctly different ways to express the inquiries to which each of their more narrow movements were ostensibly dedicated: Henri Matisse is distinctly unlike Pierre Bonnard, as Willem de Kooning is distinctly unlike Jackson Pollock, as Richard Diebenkorn is unlike Nathan Oliveira, Agnes Martin is unlike Al Held, etc., etc. Given this extraordinary variety in the art forms that came out of the century of Modernism, it is difficult to say exactly what they have in common (or what makes them Modern overall) apart from this characteristic of being freely investigative and innovative. It is possible, however, to say with some certainty that most grew out of relatively personal aesthetic or intellectual quests, rather than flowering from the seed beds of anybody else's pre-formulated theories or agendas.



As distinct as the artistic identities of the major figures of Modernism are from one another, there is a positional sameness to the works of those painters who immediately followed and overturned their movements. A certain programmatic similarity can be seen in the Pop Artists Robert Rauschenberg, Andy Warhol, Roy Lichtenstein, James Rosenquist, and even a somewhat later figure such as David Salle. These, admittedly, are all people who adopted a kindred appropriative and ironic style with respect to the visual ephemera of popular culture. But that isn't entirely where the similarity lies. It is rather in their collective adoption of the distanced, authoritative posture of the cultural critic. In claiming that role, they somewhat took their emotional skin out of the game, and put themselves in the comparatively remote and safe position of shooting from the edge of a barrel at whatever sort of fish they cared

to put inside it. What they seemed to be saying was “all is crass, corrupt and commercial, including art itself; I don't really believe in any of it, and neither should you.”

Another major development of the overlapping periods of late Modernism and early Postmodernism, especially in the top New York galleries, was the first emergence of the phenomenon of commercially marketable artistic superstardom: the now pervasive market role of fine art as an investment vehicle indexed to the celebrity of its maker—a shift that somewhat accounts for the resurgence of aesthetic painting in the early 2000s after a brief reign of (difficult to sell) pure conceptualism. Nevertheless, the spirit of deconstructive critique was carried forward into these more marketable works as a badge of artworld authenticity and seriousness. It wouldn't do to make appealing artistic commodities without embedding a jaundiced view of both aestheticism itself, and of the culture that was consuming it for such large sums of cash.

Since the postwar period, many varying strains of this more aesthetically-minded investment art followed. And yet, the posture of the ironic, insulated skeptic continued to permeate the age. We see the clearest examples in market phenoms like Jeff Koons and Damien Hirst. But the same ironic approach is also present to some degree in the work of a wide range of less overtly conceptual painters, beginning with the German Gerhard Richter—whose 2002 retrospective in New York marked painting's prodigal return to art world legitimacy. Soon after that, a crowd of younger up-and-comers followed, including Lisa Yuskavage, Walton Ford, John Curran, Dana Schutz, Peter Doig, Cecily Brown, Neo Rauch, and more recently, the fantastic Kerry James Marshall. To be clear, I consider some of these people to be outstanding artists. In any case, they are the definitive painters of our age. Time will tell which will be most remembered by posterity, but it is likely that many of them will, as well they should be. Still, they are all in some sense of an epochal



Francisco Goya, *Qué alberoto es este?*, ca. 1814–1820

kind, just as the major painters of the Renaissance or the Baroque were of a kind that is likewise fixed to their respective periods.

It is worth considering though, that when an artist fails to cleave so obligingly to the persona of a specific cultural moment, he or she can sometimes rise above and avoid being trapped in the amber of its dominant identity. The overarching character of both the art of our age, and of its critical and curatorial analysis, is that of a cannily self-conscious commentary on both the culture and itself, coupled to a mystic aura of commodifiably innovative genius that is manufactured both by and for its makers. It may be heretical to suggest this, but perhaps this is not the only kind of art there is—or, more to the point, maybe there are other ways to understand the art that we have.

So what alternatives are there to the currently prevalent approaches to both making and valuing artistic things? And, to return to the matter of political effectiveness: can powerful, socially conscious art be created without quite playing the game according to the rules we've been handed over the past half-century? Furthermore, should we even want an

alternative? What's wrong with the way we do things now? Despite an instinctive distrust of the hyper-inflated art market—and of all the ways in which its absurdvaluations are manipulated and justified by the artists themselves and their commentators—I can't answer the last question because I don't believe there is any such thing as a right way to make art. We make what we make and others get to decide what value, if any, it has for them. The art of our age, like that of any other, is a reflection of this relationship. There are excellent works to be found within it, just as there are excellent works to be found in the art of any age.

It just happens that I am not interested in doing things in the currently popular way. There is a different sort of art that is more engaging to me: an art that does not quite put the cart of content out in front of the horse of practice, and which does not harness that practice so insistently to the carrots of fame and fortune. I don't mean to suggest that such artists do not care or think about their content. And, so far as I know, most of us, myself included, want critical recognition and financial stability very much indeed. But I must confess that the minute

I read a gushing profile in the New Yorker magazine of some young (or older) art star whose prices have lately broken them into the millionaire club, or whose dazzling innovations have won them the mantle of "genius," their appeal to me begins immediately to plunge. It's an old and perhaps a puritanical conceit, but I tend to regard artistic celebrity and genuine artistic greatness as being in some fundamental way mutually exclusive conditions. The really amazing stuff seems so often to have been made somewhat outside the limelight, and in a spirit of almost anonymous, or perhaps forgotten, striving—and yes, I'm sorry, also through some sort of struggle. But striving or struggling after what? As I said at the beginning, the artists whose work most moves me seem to be after a sort of truth that the work reveals to them, rather than setting out to manufacture a vessel that will dependably deliver some already-digested idea to the viewer

or to the market. This is a very subtle distinction, because of course we all have ideas we hope to convey. But in this alternative process, a kind of subjective, perceptive alchemy can also occur within our practice which imbues its products with the mystery and power of the unknowable. A handful of oddballs work this way today: the painter Vija Celmins comes to mind, as does the sculptor Lee Bontecou.

Two painters who fit this description, and who had an immense early impact on my understanding of what art is, and what it can and can't do, were the Spaniard Francisco Goya and the Englishman J.M.W. Turner. Both came well before the French Modernists, but managed in an earlier age to evolve to a kind of expressionism that didn't happen again until the early to mid-twentieth century. Turner is classified historically as a Romantic painter; Goya, who was about thirty years older, came out of the Spanish tradition of court portraiture. But each in their different ways arrived, late in life, at an innova-

tive, personal style that wasn't easily pigeonholed as belonging to any particular movement or method. Both painted emotionally charged pictures about the important events of their time—the Napoleonic wars, the Inquisition, the slave trade, early industrialization, etc. But they described those events in ways that rose above any explicitly ideological positions into a more revelatory, and aesthetically communicated vision. Interestingly, both artists arrived at these plateaus after the success and celebrity which each had achieved earlier in life had begun to wane. Both were even considered by some contemporaries and former patrons to have gone a bit mad in their old age.

In Turner's late paintings, one gets the sense of a kind of eidetic vision having driven his practice—in which marks were made on the canvas that were not initially representative of anything in particular,

*"[the late works of Goya and Turner] suggest that ungovernable reality is an inevitable counter to all of our most controlled projections of the ideal ... they remind us that we live in a universe in which creation and destruction are inextricably linked and, in the end, unfathomable."*

but which served as a guide for drawing out some internalized memory or imagined scene. Often these scenes of Turner's were purely atmospheric, or else land and seascape derived. But he did also paint deliberately representational scenes, as in his series on the whaling industry, or Rain, Steam and Speed, his famous painting of a steam locomotive on the Great Western Railway.

Turner's picture The Slave Ship offered an unusually pointed protest of an event that had happened fifty-nine years before it was painted. He made it in a period of awakening opposition to slavery in Britain, in hopes of moving the social consensus—particularly among his aristocratic patrons—in favor of abolition. In that sense it was a completely political work. And yet, it has the feeling of having been ex-



J.M.W. Turner, *Slavers throwing overboard the dead and dying – typhoon coming on*, 1840

performed into being rather than designed; its narrative feels like more of an expression of personal outrage than any explicitly instructive polemic on a better kind of behavior.

Goya did something similar in his earlier series of etchings about the French occupation of Spain, which described the atrocities perpetrated on the Spanish people by Napoleon's invading armies in the early 1800s. Later referred to as *The Disasters of War*, these prints were about disturbing events, without commanding any particular interpretation of their literal political causes or implications. We know historically who was responsible for the crimes depicted, but the specifics are not too clearly encoded in the pictures themselves. Neither is there any overtly patriotic or nationalist sentiment in them. Rather than singling out Napoleon specifically, or the French people more generally, Goya seems to have been more determined to show us what appalling things human beings can sometimes do to one another. In all likelihood, he hoped for the viewer to be as upset as he was by that realization ("I saw it" is inscribed below one of these tableaus). But the exact content of his response, or the particulars of those events' precise political causes and ramifica-

tions were maybe less important to the artist than the strength of the feelings he was recording.

There is tremendous aesthetic beauty in the way that both Goya and Turner depicted the respectively horrific and scandalous events of their time. Their pictures are darkly emotive, but also transcendentally beautiful objects. Turner portrayed the great crime of slavery in a lurid but transporting, rather than merely scolding way. Goya, even as he created his terrible records of violence, also made them in some sense sublime. These early Mod-

ern pictures (both are Modern artists despite their predating Modernism) point to a bigger truth existing out beyond any contextually codified ideological position. They suggest that ungovernable reality is an inevitable counter to all of our most controlled projections of the ideal—that stark horror is the natural counterbalance to the comfortingly benign. They remind us that we live in a universe in which creation and destruction are inextricably linked and, in the end, unfathomable. This is a realization which can be quite effectively communicated in purely aesthetic terms, even though we may go on to meditate on its meaning with our intellects. Above all, both Goya and Turner were able to communicate these things by way of the poetry of the seen and felt, rather than through any analytically reductive instruction.

For painters especially, the conflict between these sorts of "traditional" aesthetics and the deconstructive critique that came to dominate the art of our time, is central to the question of what art can actually achieve in the political sphere. The latter approach, being quite illustratively topical, would seem to lend itself best to works of pointed protest. But as I started out to say, this may not be the most



Christopher W. Benson, Four In-Progress photos of Standing Rock painting, 2016

powerful or persuasive way to move people's feelings about the issues we care about most.

My guiding instinct from the outset of what has now been a nearly fifty-year career of making paintings, is that a strongly felt experience in the artist can elicit an equally strong, autonomously formulated (and thus fully-owned) experience in the viewer. I am also most profoundly moved by artistic discoveries that I didn't necessarily go looking for—in my own work, as well as in the art that others have made. I have to believe that when the same holds true for the viewer, they might just become roused to action. But telling others exactly how to think or

act, or why they should do so, is perhaps not what artists do best.

An example of my own efforts to work in this way can be seen in a painting I made in 2016 in response to protests by the Native American Standing Rock Sioux Tribe against a proposed oil pipeline that would traverse their traditional lands and watershed. It was a powerful, moving act of civil disobedience by a coalition of native peoples against an intrusive, environmentally destructive act of corporate capitalism. The event upset me so much that I felt compelled to make a picture about it, without knowing ahead of time exactly what form that picture would take. Instead of formulating some



Christopher Benson. *Baked Alaska*, 2018, Oil on panel, 30 by 30 inches

narrative tableau that would tell the viewer exactly how I wished for him or her to think about this issue, I imagined the place and began to make marks on the canvas that were expressive of the emotions I was having. It was immediately a picture of light and darkness at war with one another. It did not begin as any sort of literal representation of the actual protest site, but gradually resolved into a view that echoed aerial footage I had seen of the landscape there. Land and sky dominated the picture so much that I ended up leaving out any representation of either the pipeline builders or the protesters themselves, save for the tiny image of a lone Sioux warrior on horseback confronting the storm. Almost immediately, a huge black stormcloud formed above the land, which only at the end of my work took the shape of a rearing serpent (the protesters called the pipeline “The Black Snake”). This echoed Turner’s painting *Hannibal Crossing the Alps*, in which a similar cloud resolves into a looming bird of prey. In the end, I was able to impose a more literal depiction of the waterways around the site. But the process of painting the picture was as much responsible for

showing me what it meant, as I was the deliberate author of its meaning.

The Standing Rock Painting was a work of protest against an event with definite political implications. It was not, however, an intentionally political picture, but one driven by strong feelings and created as a graphic container for them. I imagine that this is a similar process to what the artists I’ve described above used in the past. My pictures certainly share a kindred feeling with that earlier work. In that sense, they partake of a tradition. But they’re not a pastiche or imitation of those older forms. A craftsman I know who hand-carves letters on gravestones once said: “[...our stones] look the way they should for our time. To some, I’m certain they look primitive, but they don’t look like eighteenth century stones, they just kind-of adhere to the same principles.”

Being an artist is a highly skilled vocation with a rich history of revealing meaningful truths, in its own unique terms, about the human condition. We painters especially have the extraordinary freedom to record what we see and feel without needing to explain it, even to ourselves. Why surrender that freedom, that subjective magic, to the pedantry of philosophy and critique? If what we witness in the world is beautiful or awful, tragic or sublime, and we feel in our hearts that this is so, then looking at it squarely, feeling its effects, and reflecting their impact through some thoughtful, or even impassioned practice—all while allowing the nature of all things good and bad to come through of their own volition—this is, for me, the most effective way to take action through art.



Christopher W. Benson, *Standing Rock, Coming of the Black Snake*, oil on linen, 2016

# WHEN THE LANDSCAPE IS QUIET AGAIN

## NORTH DAKOTA'S OIL BOOM

Sarah Christianson

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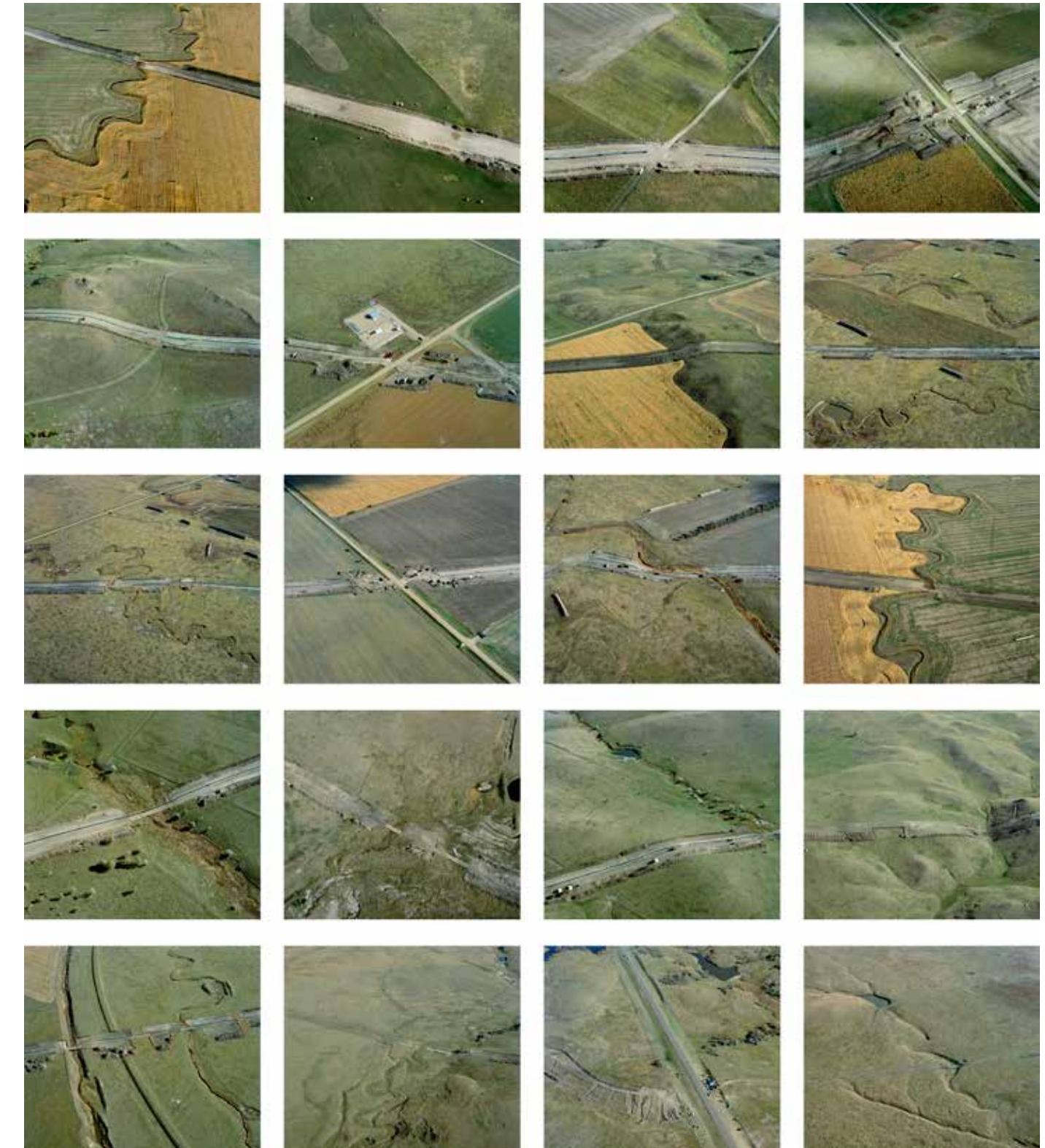
Since 2012, I have been documenting the legacy of oil booms and busts in my home state of North Dakota. My photographs bear witness to the transformation of its quiet agrarian landscape into an industrialized zone dotted with well sites, criss-crossed by pipelines, illuminated by natural gas flares, contaminated by oil and saltwater spills, and fracked beyond recognition.

North Dakota is no stranger to the oil industry. Its previous booms of the 1950s and 1970s peaked with only 3,000 active oil wells. Now, the Bakken Boom currently underway has added over 10,000 new wells that are pumping out more than a million barrels of oil per day, due to horizontal drilling and hydraulic fracking.

Everyone wants a piece of the action, including my family: since the Bakken Boom began, we have been profiting from oil wells drilled on land my great-grandparents homesteaded in 1912. Although many other families are doing the same, I started this project to reconcile our involvement with the hidden costs of this prosperity and to give a much-needed voice to those who feel powerless to effect change.

In 1973, North Dakota's Governor, Art Link, envisioned: "We do not want to halt progress... We simply want to insure the most efficient and environmentally sound method of utilizing our precious resources for the benefit of the broadest number of people possible. And when we are through with that and the landscape is quiet again... let those who follow and repopulate the land be able to say, our grandparents did their job well. The land is as good and in some cases better than before."

Unfortunately, his hope for the future remains a fantasy thus far: our grandparents did not do their job well. I examine the scars from prior boom-and-bust cycles and the new wounds being inflicted upon my home because the status quo must change: something needs to be left for the next generation, not just the next quarter.



Sarah Christianson, *Sections of the Dakota Access pipeline near Standing Rock, October 2016*, archival pigment print

This heavily protested pipeline carries oil from western North Dakota to its terminus in Illinois. It bores underneath the Missouri River, less than a mile from the Standing Rock Sioux Reservation. Its route and construction were controversial, most notably because it was supposed to be installed north of Bismarck, the state's capital. This plan was rejected because of the threat to the water supply, yet this was deemed an acceptable risk for the Standing Rock Reservation to bear instead.



Sarah Christianson, Flaring near the Blue Buttes, January 2015, archival pigment print

Natural gas is being flared off in North Dakota due to a lack of infrastructure. Before new policies were adopted in 2014, upwards of 30% was being burned and wasted. Flaring has now dropped to around 18%, and the overall goal is to reach 10% by October 2020.

Right: Sarah Christianson, Cleaning up the largest inland oil spill in the United States on the Jensens' land near Tioga: 2014, 2015, 2016 (triptych), archival pigment print

In 2013, the largest inland oil spill in the United States was discovered by Steve Jensen as he harvested wheat: over 865,000 gallons of oil had leaked into his land from a twenty-year-old pipeline. Since then, the cleanup area has grown from fifteen to thirty-five acres and remediation efforts are still ongoing.





Sarah Christianson, *Shale Shaker St*, July 2015, archival pigment print

North Dakota's oil is trapped in small pockets within dense shale rock formations. To unlock the oil, wells are drilled horizontally through these layers and fracked with a high-pressure mix of water, sand, and chemicals.



Sarah Christianson, *Well site carved out of bluffs near the Badlands*, August 2013, archival pigment print

The Lakota called this area "mako sica" or "land bad." French-Canadian fur trappers did the same, claiming these were "bad lands to travel through" because of the rugged terrain. Although no drilling is taking place within Teddy Roosevelt National Park, the noises and sight of oil development along its borders are clear.

## DAKOTA IS EVERYWHERE

The fracking boom in North Dakota is transforming the prairie and disrupting the lives of the people who live there.

Photos by Terry Evans

Text by Elizabeth Farnsworth

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For two years photographer Terry Evans and I have been exploring a modern-day oil boom on the North Dakota prairie. We've traveled seven times to the area of the Bakken boom, named for a shale formation two miles underground. New methods of hydraulic fracturing are making ever-more petroleum available from the shale, and we have tried to document some of the consequences for the prairie and those who depend on it for their livelihood.

Prairie and oil are both stored energy from the sun.

When Terry and I first arrived in Williston, epicenter of the boom, in June 2011, we had trouble finding a place to stay. Roustabouts and truck drivers had filled the motels. Some people were sleeping in their cars in the Walmart parking lot. We finally found rooms just over the Montana border, near the confluence of the Yellowstone and Missouri Rivers; on future trips we made reservations weeks ahead.

As we traveled across territory made famous two centuries ago by the journals of Meriwether Lewis and William Clark, we experienced stories as deep as the shale and as wide as the prairie. Some of these stories appeared earlier this year in an eleven-part blog on the website of the Center for Art + Environment, at the Nevada Museum of Art, where Terry and I are fellows. Recently, some events and scenes we mentioned briefly, or not at all, have taken on new significance for me. Two examples:

East of Williston, we toured a large "man camp"—prefab housing erected quickly for oil workers. Afterwards, I stood alone near one of the barracks-like buildings, taking in the scene. A west wind

was blowing, as it usually does in North Dakota, and construction dust filled the air. (Dust is omnipresent in the oil patch.) Nearby, a young Labrador Retriever attached by a long rope to a front door handle was barking, in frustration or despair. We were on the south side of Highway 2, the four-lane strip running through the oil patch, and beyond us, towards the Missouri River, lay vast, mostly open lands. We saw no one in the camp except the dog and the superintendent who had given us the tour. Everyone else was working the long hours common in the oil industry, or asleep. Suddenly I felt chilled by a sort of shadow, something invisible and ominous. As we drove away, I could see, just beyond the dusty dormitory-camp, that the prairie was green and vibrantly alive—an unsettling juxtaposition.

Another day, at an RV camp near the small town of White Earth, we walked past a "No Trespassing" sign to talk to residents about the attraction of oil jobs. The sign was off to the side, and I can't remember seeing it. We met a woman with pots of red geraniums around the door of her RV. In Missouri, she and her husband had owned two Midas muffler shops that had failed, for reasons still unclear. They learned about the Bakken boom online, she said, and now her husband was making "up to \$80,000 a year" trucking water to oil sites. She was working as a cook in a school cafeteria about fifteen miles away. A younger man, a college graduate, came across the lot to talk as well. He had lost his Minneapolis business in the recession and was now working on a pipeline building crew.

Soon the owner of the camp came running from his office, berating us for trespassing. He more or less forced us back to the main road. "I could call the police," he threatened. "You have no idea how devastated these people are. You didn't see smiles, did you? Banks won't let them in the back door. Husbands are here without wives. There are fights in bars. I won't allow you to photograph the misery of people in this camp." And then: "This isn't a boom. It's an industry. They're putting in \$50 mil-



Oil pads and prairie potholes northeast of McGregor, May 2012. [Photo by Terry Evans]

lion office buildings. This is going to be Anchorage, Alaska, right here."

Today, reading my travel notes, I understand that his angry words were more illuminating than I'd realized then. Outside Williston and in White Earth, at the camps where the oil workers were living, Terry and I felt as if we'd traveled back to scenes from the Great Depression. Today I can see that again and again during our journeys, boosters of the boom urged us to discount damage from the oil industry—to see it as offset by the economic boon of relatively high-paying jobs in a time of high unemployment. Few boasted that Bakken oil might make the United States more energy independent. Mostly they emphasized the multiplier effect of boom-re-

lated payrolls on places and people broken by tough times, not only in the recent recession, but during the droughts and floods that have made North Dakota a hard place to earn a living.

That's why a letter to the editor of the Williston Herald, from a woman we met at a meeting organized by the Dakota Resource Council, caught Terry's and my attention this past February. Shelly Ventsch, of New Town, put it more clearly than almost anyone we'd met:

Much of what I cherished is gone or disappearing. ... I am trying to navigate farm equipment through a string of crazy drivers of semis raising clouds of dust, stunt-

ing my crops, lowering my yields. I am picking up oil-soaked ducks.

...  
I am searching for the sight of the wildlife which is no longer there. I realize everybody is not to blame for this, but the general feeling is we have been forced to sacrifice our way of life to accommodate the nation's unemployed and to feed the state's insatiable appetite for money.

...  
I do not expect understanding, nor am I looking for sympathy. I just want the life I had already made for myself.

When Terry and I began our exploration, about 5,500 oil wells were producing 11.5 million barrels of petroleum monthly. Now about 9,000 wells are pumping more than double that amount, and the numbers are rising rapidly. On the ground and also from the air, we witnessed a proliferation of sites for drilling, fracking, pumping, shipping, piping, refining, and dumping waste from oil.

Terry's photographs reveal a constant tension between the industrial facilities and the mysterious beauty and timelessness of prairie. We were exploring early enough in the boom to experience still-vast stretches of native prairie, but that is changing. The industry is a juggernaut in the original sense: the word derives from Sanskrit and recalls Vishnu's image being carried on a cart with large wheels that could crush devotees along its path. Like the Hindu god, the oil industry is at once creative and destructive. If all proceeds as planned, 45,000 more wells will be drilled into the Bakken and Three Forks Formation in the coming years, with implications that reach far beyond the prairie.

The International Energy Agency released a study last year predicting the United States will overtake Saudi Arabia as the world's leading oil producer before 2020, largely because of the oil and gas now available through fracking from shale, in North Dakota and elsewhere. That same report reminded us that two-thirds of the earth's remaining fossil fuels would need to remain in the ground until 2050 to

avoid the earth's temperature rising more than two degrees Celsius; as documented in the Copenhagen Accord, scientists believe this is the limit beyond which further climate change will become dangerous. (Our world is still profoundly dependent on petroleum. Terry and I were acutely aware of this each time we boarded an airplane to North Dakota and traveled to remote drilling sites in a rented SUV.)

North Dakota has already experienced economic swings with national implications. Before petroleum, there were booms in fur, gold, railroad, land, and banking; there was a smaller oil boom in the 1950s, too. Cycles of greed and grief are familiar in American history, which is one reason why the refrain, "Dakota is everywhere," occurs repeatedly in *Letter to an Imaginary Friend*, Thomas McGrath's epic poem about land and life in his home state.

*Southbound the coulee  
Carries its freight of moonlight toward the fox-brightened river breaks.  
All time condenses here. Dakota is everywhere.*

## BULLISH ON THE BAKKEN

Brigham Exploration, a company based in Austin, Texas, was one of several operators in North Dakota and elsewhere that figured out how to drill two-mile-long, lateral wells and frack them in multiple stages to free oil from shale. That new technology, along with high oil prices, made drilling in the deep Bakken shale economically feasible. As production increased in late 2011, Statoil, which is 67 percent owned by the Norwegian government, became so bullish on the Bakken that it bought Brigham for \$4.7 billion, gaining Brigham's expertise and 375,000 net acres in North Dakota. Brigham's CEO and others moved on, but engineer Russell Rankin stayed in the Bakken as Statoil's regional manager, and he met with us in Williston late last year.

I wrote about Rankin in our Art + Environment blog and bring him up again here because he's im-



Oil pad below the Jorgensons' home, April 2012. [Photo by Terry Evans]

portant, since I am being partly elegiac for all that's being lost in the Bakken boom. Rankin represents an especially forward-looking aspect of the oil industry in North Dakota. Before meeting him, I read Walt Whitman's *Song of the Exposition* because I wanted to feel what it was like when a poet could "sing" an industrial boom.

*Mark the spirit of invention everywhere, thy rapid patents,  
Thy continual workshops, foundries, risen or rising,  
See, from their chimneys how the tall flame-fires stream.*

Rankin is thirty-nine years old, deferential, and polite. He told us Brigham/Statoil had quadrupled production—far more than he'd anticipated—since Terry and I first visited the state two summers ago. We drove together to a new Statoil site, a 176-foot-high Sidewinder drilling rig that stood on a rise a few miles north of the Missouri River. The bright

red rig—a sharp contrast against the light snow—had robotic feet and in the next few weeks would "walk" in order to drill two boreholes.

From the rise, I could see that we were in the middle of what would eventually be a multitude of wells along a section line road. Barely visible—almost ghostly in the fog—were several pumpjacks and a wide gash through the prairie—a trench for a pipeline under construction. Behind us, just over the hill, was a barn, and I figured a farmhouse wasn't far away. Rankin didn't know who owned the mineral rights Statoil had leased to drill the well. (In North Dakota, in tough times, people have sold their mineral rights to save farms and ranches, meaning land owners sometimes don't benefit much from wells drilled on their property.)

As I observed the industrial structures, I was struck by the radical transformation of formerly rural land. North Dakota was, until recently, about



Teepee stones on Davis prairie above White Earth, ND, 2011. [Photo by Terry Evans]

18 percent prairie—a source of pride to many in the state. Terry's photographs of the changing landscape document continuing loss and fragmentation of that prairie. Fragmentation is an enemy of the wide variety of plants and grasses that make a healthy prairie. It can also be the death knell for wildlife that depends on those plants and grasses.

Before climbing onto the Sidewinder rig, we went into a trailer serving as headquarters for the drilling operation known as "geosteering" and met the workers. They would soon guide a drill bit two miles down into the earth, gradually executing a 90-degree bend, and then go two miles more laterally through dolomitic sandstone lying between two layers of shale. Sensors on the drill bit would provide the information needed to guide it by remote control. "It's like steering a car backwards," Rankin said. After drilling, the well would be hydraulically fractured. Oil companies have fracked in North Da-

kota and elsewhere for a long time, but only in recent years have they reached current levels of precision, reach and explosive force. Compressors pump tens of thousands of tons of chemicals (some toxic), several million gallons of water, and 1,000 to 2,000 tons of sand into a well at about 8,000 pounds of pressure per square inch. The liquid shoots down the pipe and when it reaches the two-mile long horizontal portion, it explodes out of holes every couple of hundred feet, fracturing the shale to release petroleum.

Later that afternoon, Rankin led us over large vats of churning "mud"—the drilling fluid (diesel fuel, water and chemicals) that would clean and cool the drill bit and carry cuttings out of the hole. "Statoil is working towards a mineral-based, environmentally friendly mud," he told us. He also said Statoil will use 50 percent recycled water for fracking sometime in the near future (other oil companies are talking about using recycled water too).

He was eager to explain that his company is environmentally conscious, perhaps because he sensed critics of the oil industry nipping at his heels.

I thought of rancher Brenda Jorgenson, a critic of industry recklessness, on the Statoil rig that day. She and her husband Richard run 100 Black Angus cattle on 2,240 mostly prairie acres in the White Earth Valley northeast of Tioga. They also farm flax, alfalfa, and spring wheat. "I feel the bond to this place in my soul," Brenda told us on the first of several visits. "Providing food is our mission and calling." She described a discussion last year with a state oil and gas regulator about the waste pit near the oil well on their land. He claimed that a plastic liner—the barrier between toxic liquids in the pit and the soil—would last for at least forty years. "You won't be around after that anyway," he told Brenda. "What do you care what happens after you're gone?"

"A chasm separates that way of thinking and ours," Brenda said. "We've had the privilege of living here and calling it home because generations before us cared for the land. We owe it to future generations to do the same."

An oil well was drilled on one of their flax fields in late 2010. Construction killed more than fifty olive trees planted on that land as a soil conservation measure thirty years earlier. Brenda showed us a photograph of a road grader moving earth at the far edge of the oil pad, damaging trees. She believes other trees died from toxic fumes or hydrological changes caused by compaction that cut off sources of water.

This early damage to a symbol of good stewardship played a key role in making Brenda something she says she never was before: angry, assertive, and outspoken. She wrote letters of complaint to the oil company and regulatory agencies, with no response. Then the waste pit near the well, which is filled in now, overflowed during the 2011 spring thaw, sending unknown toxic fluids across the road between Brenda's and her daughter's houses and down towards the White Earth River. (fifty-sev-

en pits in northwestern North Dakota overflowed that spring.) In the days that followed, members of Brenda's extended family were exposed to fumes from those fluids. Brenda, her son-in-law, and her granddaughter suffered symptoms like cough, laryngitis, and burning eyes. Brenda tried, but failed, to get the contents of the pit tested; no company or regulatory agency would do the testing, and it would have cost \$2,700 to get it done on her own. Again she wrote letters to the oil company, which now claimed it had followed "standard procedures" in disposing of the waste; again she wrote to county, state, and federal regulatory agencies, with no result. Most people she called on the telephone said, "This isn't our responsibility."

At that point she began addressing her letters: "To whoever will take responsibility."

Across from the oil well and just down the road is a larger pad with the usual tanks and a well. Though it's not on Jorgenson land, it's at the bottom of their driveway and dominates the area southwest of their house (as Terry's photograph shows). The company will eventually have multiple wells on that pad.

A gas flare just 800 feet from their living room burns above the pad. The flare has blown out six times, and the resulting fumes have driven the Jorgensons from their home. Brenda has written many letters about this to the oil company and state regulators. (These too got no response.) She also helped circulate a petition organized by the Dakota Resource Council that hundreds signed. It endorsed a bill calling for the placement of oil operations at least 1,000 feet from dwellings (not 500 feet as permitted now.) The bill got amended several times and never made it out of a North Dakota Senate Committee.

I called Brenda and Richard recently to pose a question I hadn't asked before. "If you had it to do over again, would you lease any mineral acres to an oil company?" They own only 137 of the mineral acres under their large ranch (earlier owners, including Richard's father and grandfather, had sold off the rest). Thirty-eight have been drilled so far.

They've received only a small sum of money from the sites ruining their daily lives. Richard said they'd refuse to lease any of their mineral acres if they had it to do over again.

The refusal would have been symbolic, a decision not to accept income born of destruction, and it wouldn't have prevented the drilling of the well on their former flax field or more wells on the ranch in the future. In North Dakota, as elsewhere in the nation, state law ensures that mineral holders can exploit what they own, even if a landowner objects.

## "IT BROKE MY HEART WHEN THEY TORE UP OUR PRAIRIE"

The problems faced by the Jorgensons and other ranchers we met are legion. According to state records cited by Nicholas Kusnetz in a June 2012 article in ProPublica, oil companies in North Dakota reported more than 1,000 accidental releases of oil, drilling wastewater, or other fluids in 2011. Kusnetz wrote that state regulators also acknowledge many more illicit releases that went unreported. We met a trucker over dinner one night in Williston who had just witnessed another driver dump drilling waste in a stream south of town. Over lunch in Tioga, a farmer described seeing waste discharged in a newly planted field.

Cattle have reportedly been sickened by contaminated water and died from dust pneumonia caused by traffic on dirt roads. Trucks hit animals on highways when fences aren't replaced properly after construction of oil facilities.

"I think people would value prairie more if they understood they're eating grass when they eat the cows," rancher Scott Davis told us as we walked down a road gouged across his land by an oil company for its new well. Davis owns 1,100 acres of land, 80 percent of it prairie, in the White Earth Valley, and 240 mineral acres underneath. "It broke my heart when they tore up our virgin prairie," he said as we stood on a rise above the huge scoria-covered

oil pad and well on what had been his favorite land. But we couldn't stop them." Like Brenda Jorgenson, Davis is working with the Dakota Resource Council and other groups to get more and better regulation of an industry they consider often out of control.

Scott and his brother Steve are candid about benefitting from the boom. They receive checks every couple of months from the mineral rights they still own, and they got a one-time payment of \$22,500 from the company for use of the land for the well, road and pipeline. Three of Scott's children, who also revere the prairie, have recently built modular homes on the ranch, which they paid for with money from oil-related jobs. Scott says his children most likely would have left North Dakota if not for the boom. "I'm not opposed to all drilling," he says. "I just want them to do it safely for people, animals and land."

Meanwhile, life for the Davis family—and for so many others—continues to change. Today Scott and Steve lock the doors to their houses and cars, which they never did before. They try to travel on the back roads with less traffic and to buy groceries in small towns, like Powers Lake, instead of busy Tioga. They no longer herd cattle even on remote dirt roads because of speeding trucks. Crime, almost nonexistent in the past, is much more common, and the Davis family, like many other long-time residents, are wary of strangers in ways they never were before.

As Scott Davis said to us, more than once: "Our way of life as we know it is over."

This article was originally published in *Places Journal* in June 2013.



Scott's Appaloosa foal in his pasture near White Earth, ND, 2011. [Photo by Terry Evans]

## MEMORY AND THE DIAL FACE

for Ken Sara Wiwa

Elizabeth Herron

Before dawn – she stirs the embers,  
singing softly for her daughter.

Shush-whiz of morning commute  
wheels turning numbers changing.

The parts of a gasoline pump  
include the dial face

where numbers roll  
tracking gallons, dollars—

not the hands holding plastic bottles  
and tin cups under the leaking pipeline,

not the lives that don't count.

From the highway traffic picks up—  
wheels whirring numbers changing.

Her face bright in firelight  
she stirs the embers in the morning

singing softly for the daughter  
who vanished into bits one might

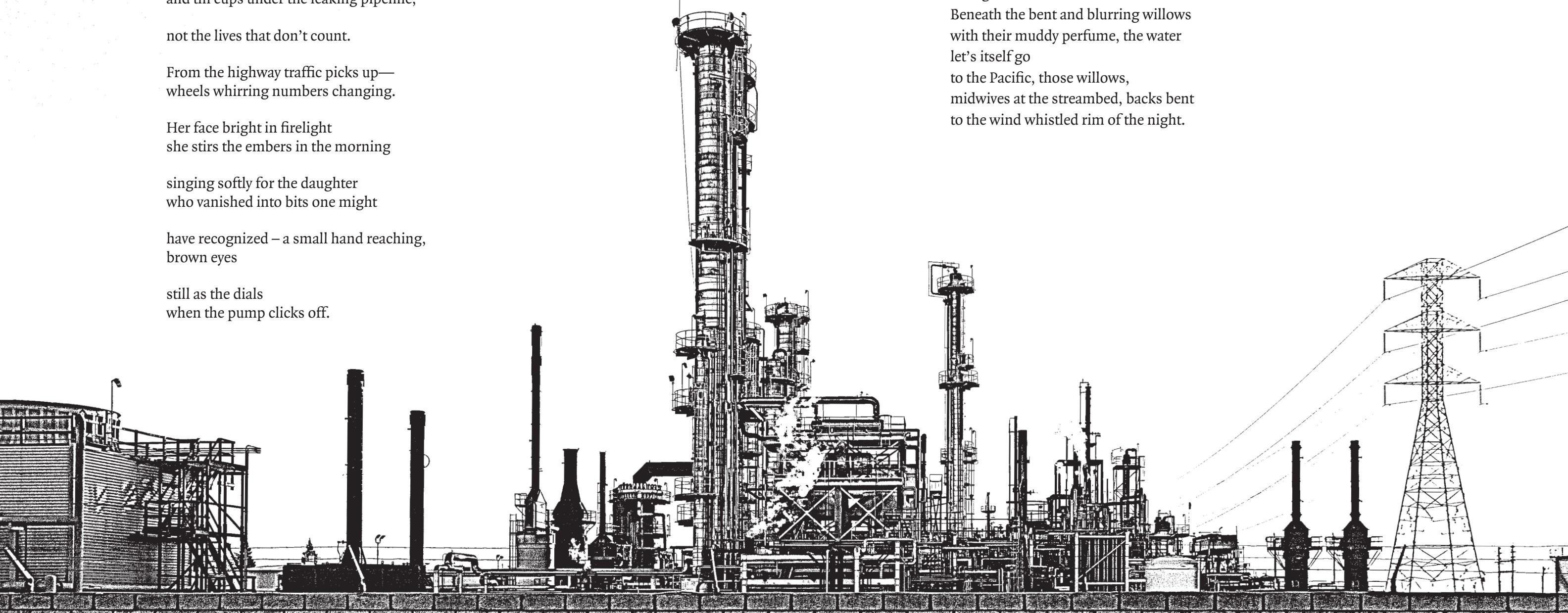
have recognized – a small hand reaching,  
brown eyes

still as the dials  
when the pump clicks off.

## LIT WINDOW

Elizabeth Herron

Willows along the creek bank  
hunched against a faint salt haze  
drawn up the valley by twilight's chill.  
Rows of eucalyptus lining open fields.  
Someone walks past  
the first lit window. Who is it  
forgetting even the names of the dead,  
the quick hours  
before starlight,  
forgetting the tableware  
and teacups waiting  
in another house  
losing its walls in the dark --  
Beneath the bent and blurring willows  
with their muddy perfume, the water  
let's itself go  
to the Pacific, those willows,  
midwives at the streambed, backs bent  
to the wind whistled rim of the night.



## THE RANGE OF EDEN

Elizabeth Herron

Once we were earth  
was beautiful was water  
flowers  
under sea  
in forest even  
deserts bloomed  
here  
blossom and bee all shaped in lovely  
and dancing in flit and suck and honey  
and languid-limbed we brought forth  
and died back  
in our season and lived again  
in the long line of mother to mother  
earth  
to seed to flame of spring—  
in balance did we. In balance  
and beauty.

Sweet of windfall fruit  
smell of damp ground  
glimmer of wet leaf.  
Each season ever and ever  
unfolding into complexity  
even the smallest intricate interweaving  
returning to begin again.

We saw winter snow untracked  
each flake a sacred fractal world.  
We saw the raindrop caught  
on the iridescent web in the woods  
before the angle of the light changed.

We were happily motes on spears of sun  
in the morning of it all.  
We were blossom and bee  
and shaped in love and dancing.  
We were earth and tree and sky and sea  
and drifted all unknowing  
in the Goldilocks Zone of Eden.

As we also chewed the bitter seeds  
and separated and hoarded  
and broke the pattern  
and were punished with loss  
and were lost to what we loved  
and lay in the darkness lonely  
and un-entwined.

*The Goldilocks Range is the range of temperature within which life evolved on earth, also known as the range of habitation or range of life.*

## GHOST DANCE

Elizabeth Herron

Door open  
Quiet spaces in the mind, Jack said,  
wide as the Great Plains

into the bell jar of the cell phone  
into the places of black stone

In Nebraska and Kansas  
closed in the air conditioned cab  
of the huge harvester

earphones and a Country music beat  
occupy the mind as the machine  
pitches over acres

pocked for thousands of years  
by burrows and warrens that caught the rain  
for the Ogallala aquifer

The harvester shambles on  
lumbering over the bones of the buffalo  
grinding over the quiet spaces in the mind

of the First Nations—  
the Lakota and the Cheyenne  
whose Ghost Dancers chanted

to restore their lost world  
*Father, give us back our arrows*  
and the Father says, You shall live! You shall live!

Stones  
Black stones  
Machines and silicone chips

How will we live  
without the quiet  
spaces in the mind, Jack?

In the far cities  
under indifferent towers  
that hunt our sleep and glean our dreams

harvesting the algorithms  
of the Twenty-First Century  
the cash register rings

in the irregular rhythm  
of the ghost dance  
of zeros.



Michelle Waters, *Land of the Free*, acrylic on canvas



Susan Crile, *Conflagration*, 1992, oil and pumice on canvas, 92 by 168 inches



Susan Crile, *Encrusted Tar*, 1994, oil and tar on canvas, 60 by 60 inches

# THIRTEEN WAYS OF LOOKING AT SMOG

—after Wallace Stevens

Anna Yin

I  
mountains or bridges?  
cannot tell...  
we are only the moving blackbirds

II  
blue sky—merely a dream,  
green—out of sight,  
black somber escorts...

III  
in this dark watercolor  
under a red alarm  
we fantasize feathers pure

IV  
plunging, plunging,  
nearly all indexes...  
except the Air Quality

V  
speechless,  
masks against tongues...  
newspaper's brazen statement: non-toxic

VI  
blue skies shy away  
dark nights...  
darkened eyes

VII  
*Ignorance Is Strength...*  
today's hotline:  
crimes for wearing masks!

VIII  
 $2+2=5\ldots$   
in dreams,  
someone is coughing

IX  
watch out!  
watch in  
and out...

X  
out of order!  
who fashions  
this tide of smog disaster?

XI  
poison thick in the air  
poison sinking into the body  
poison leadening our wings...

XII  
mountains or bridges?  
it doesn't matter...  
we are blackbirds still

XIII  
in this dark watercolor  
at the dark dawn  
we lose our feathers



Lisette Tardy, *Ténèbres / Shrouded in Gloom*, 2015, oil on canvas, 90 by 90 cm

published in "Undocumented Great Lakes Poets Laureate on Social Justice" (Michigan State University Press 2019)



Lisette Tardy, *Père pourquoi m'avez-vous abandonné?*, 2015, oil on canvas, 61 by 50 cm

## DARK ENERGY

Adam Cornford

Black inhuman plumes of entropy ascend from bombed Iraq wells and exploded tanker cars in Quebec

Great black snake sways its many-eyed head as it tries to find a way south from boreal tar desolation past Lakota drum-shields

Black coal soot coating the earth's lungs paling to ghost-gray and pink coughing froth as all Beijing becomes a forbidden city

Capital intelligent black cancer swirling in the eyes of executives commands them to create Venus climate in the skies of Gaia

Blackness invisible in well-lit rooms and cubicles rises through the floors to form face-eating mirrors like liquid obsidian

Despair transmutes to viridian light in alembic hearts as voice-crowds face down the black uniforms of planetwide extinction

Energy of convection flows between black outer robe and white inner robe of a Bedu woman soaked in sun

## THE SEASON

Adam Cornford

No longer the Salton Sea  
with its necklace of fishbones and collapsed marinas  
guano spatter        reeds        algae stink  
it's the desert they want

Huge mobile homes and RVs  
painted in flaring stripes and swirls  
stream  
one after another  
south on the 86  
race bikes racked in back    jeeps in tow  
pull in at Arco AM-PM oasis  
tacos bottled water beer cigarettes ice        fuel  
right turn        out along the Salton Seaway  
corrugated into asphalt waves  
they ride like ships  
headed away  
from the Sea

Gather on bare flats        backdrop a looming arc  
of stark gray-pink scree slope mountains runneled  
by gone rain  
scrub-dotted in slate twilight        Assemble  
temporary suburbs        wheeled oblong bungalows  
spaced        well        apart  
just like home  
faraway burr of diesel generators  
blue propane stars under grills  
lawn chairs        chilled six-packs

Anza-Borrego Desert State Park  
where they park

sedimentary layers        buff        taupe        faded rose  
ancient Pacific floor  
tectonic uptilted        then weather-planed off  
under traveling cloud shadow  
winding canyons and arroyos  
ghost rivers where water once found ways  
no flow in years  
but wind

Now ORVs and dirt bikes buzz and snarl along them  
swarming metal insects  
eat the dry  
Martian silence  
piloted by boys in helmets visors masks  
tight coveralls  
patterned with death's-heads or flames  
so many  
fine dust plumes rise    merge into    beige haze  
under pale blue winter vault

their other plumes invisible  
combusted  
clear        refined        aromatic  
hydrocarbons  
not just the engines    theirs and parents'  
24/7 A/C        fridges        lights

while the young riders faceless in their spaceman gear  
veer bouncing along washes  
track ruts between    sandstone hill hummocks  
low mesas  
like those desert kingdom princelings  
carefully taught  
never to pick up what they drop

After they pass  
scatter crows return    as silhouettes on ridges  
quick rabbits re-emerge to nibble  
coyotes nosing        resume the hunt  
the vague dust slowly  
settles  
the carbon  
keeps going  
the desert forgives    it is made    of abraded time  
the climate  
not

## PAYSAGE MENACÉ

BAY FARM ISLAND SHORELINE, ALAMEDA,  
NOVEMBER 2006

Adam Cornford

To our left are clustered new stucco castles of Business  
some turrets near finished, some windows x'ed with white  
others awash in horizon and the dark of peninsula hills

as we stroll sunset hand in hand on this artificial island  
The twilight-pale concrete path with its sea rail and lamps  
immaculate de Chirico perspective receding southward

along it range angled fishing rods, thin black diagonals  
one after another arcing at the tips with the line's weight  
and the brown men watching them idly with open cans

in work-thick hands talking quietly in Spanish or Khmer  
waiting for fish bodies bright as the mercury compounded  
into infinitesimal death-bells in their pink-white flesh

Your dogs thrust black nostrils into palimpsests of smell  
and the blank fast-food picnic litter overflowing the bins  
adding their own odors to shrubs and ornamental grasses

The sky layers with photochemical slate, rose, umber  
above the silhouettes of San Francisco and the Golden Gate  
Airliners at this range bulky in black-and-flame livery

angle up silently towards and over us, one after another  
dragging blank thunder in a slow crescendo behind them  
through blast-wakes of kerosene and hot invisible carbon:

carbon that joins the breath of traffic whose far-off softer roar  
draws a line of white sound below the window-glitter hills  
and the whitewashed plumes of power plants further south—

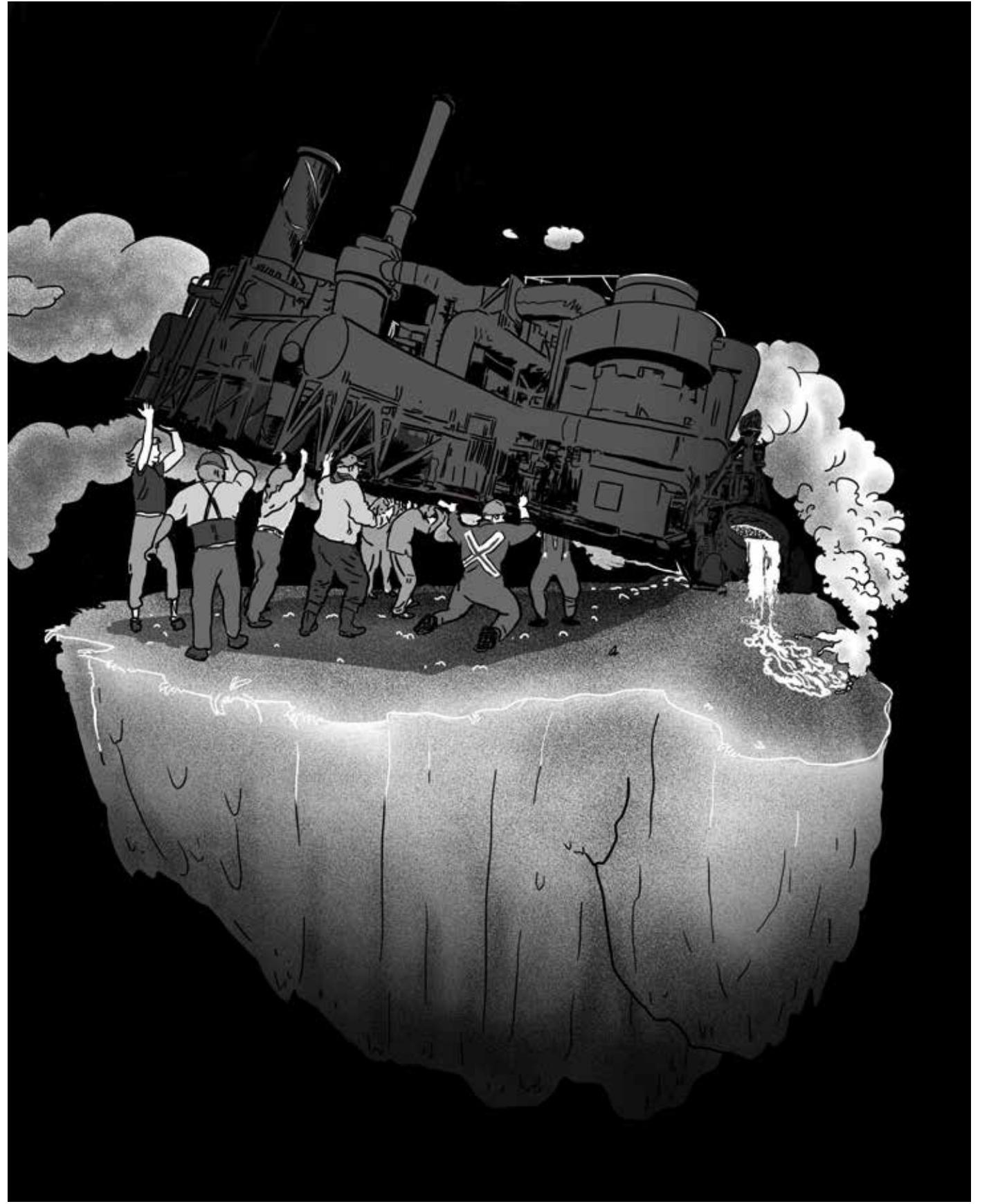
You point at the bay overlaid with wrinkled indigo mirrors  
exclaiming at five dark bird-shapes taking it easy there:  
pelicans whose beaks like seismograph pens trace breeze

into ripples, watching for fish-gleam or lifting themselves  
on crescent wings, brushing up tiny wakes with the tips  
as they swoop then glide down to a brief ruffle of surface—

worlds of delight almost extinguished four decades ago  
by designer chlorides gathered in the fatty livers of perch  
Today precariously restored they laze and feed up for when

they will squadron south to Baja's warm whale-nurseries  
Meanwhile we bear the perishable niche between our bodies  
in linked hands through November lightfall back inland

*in gratitude to Tomas Tranströmer*



Nicole Marie Burton, Overthrow Extraction, 2019, digital illustration from the book *Unearthing Justice*, by Joan Kuyek, published by Between The Lines



Nicole Marie Burton, Externalized Costs, 2019, digital illustration from the book *Unearthing Justice*, by Joan Kuyek, published by Between The Lines

## FRACTURED: THE SHALE PLAY

Nina Berman

WWW.NINABERMAN.COM

*Fractured: the shale play*, documents the altered landscape and human consequences of unconventional gas drilling in the Marcellus Shale formation in Pennsylvania, USA.

In this time of climate crisis, rather than concentrate on sustainable solutions, energy companies are using the decline in peak oil as incentive to exploit new sources of fossil fuels in places and in ways previously unimaginable. From Ohio to Australia the globe is now mapped according to shale rock deposits and the treasure of natural gas that lies within.

Through an unconventional process called hydraulic fracturing, or fracking, companies drill down then explode the shale using millions of liters of water laced with toxic chemicals and sand to release the gas to power our world.

Serious environmental hazards have been associated with this type of unconventional gas extraction: Water contamination, livestock death, human health impacts, increased air pollution and VOC emissions from associated infrastructure. Unusual earthquake activity has been reported near drilling and waste injection sites. Methane flared off and released as fugitive emissions is twenty-three times more potent a greenhouse gas than carbon dioxide burned from coal and oil. Used frack water becomes toxic and, in some cases, radioactive waste. Fracking is water dependent requiring 20 millions liters for just one well. With hundreds of thousands of wells planned worldwide, this form of energy extraction appears anything but sustainable yet has been presented as a bridge fuel solution.

In the USA, unconventional gas drilling is occurring in poor rural areas that are in deep economic distress. A land man knocking on the door holding

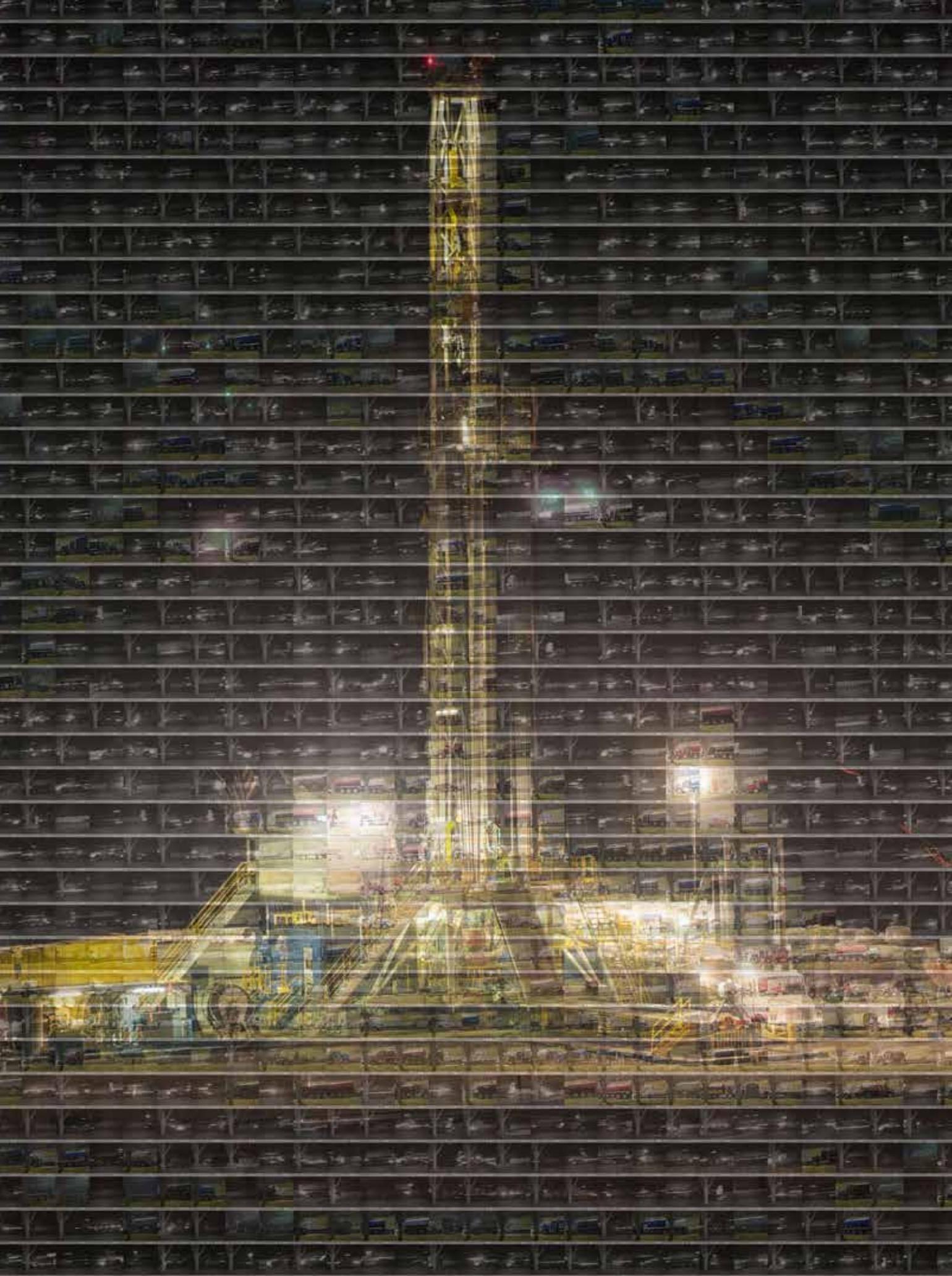
a gas lease promising an easy path to lucrative reward is an irresistible opportunity. The result is an all out gas rush presenting two competing visions: a vision of environmental preservation and a vision of short term economic gain through extraction.

Where these two visions collide is where this work is based.

Industrial activity is visually dramatic. Yet the activity is fraught with toxic impacts, presenting a visual paradox. Acknowledging this paradox, I focus on the strange beckoning and discomforting allure felt when landscapes shift from natural to industrial. Yellow rays, which seem like sunshine, are methane flares; pitch-dark dirt roads unfold into bursts of poisoned light. In this unsettling environment, I include portraits of individuals who are psychically and physically trapped amid this compromised landscape.

Right: Nina Berman, Rig Mosaic, Pennsylvania, detail, 2016, archival inkjet print

This photograph combines a high resolution image of a shale gas drilling rig with 1764 low resolution images captured by a wildlife camera which recorded truck traffic during shale gas operations. Truck images provided by Frank Finan.





Nina Berman, Flammable tap water, Pennsylvania, 2011, archival inkjet print



Nina Berman, Methane Flaring, Farmhouse, Pennsylvania, 2011, archival inkjet print

## HERE'S WHAT SCARES US

Craig Czury

we don't know what's going on

we know what's going on  
but we don't know all of what's going on

we know what's going on  
but we don't know who's doing it

I mean we know who's doing it  
but we don't know who exactly is doing it

we don't know their names  
we only know the company names

the why is obvious  
it's the how that leaves us a lot of questions

even when they explain it to us  
even when their spokesman goes on tv

even when they parade their heavy equipment  
past our farmhouses at breakneck speeds

even when they let us watch from the fence  
in our cars afraid to get out

especially when they come to our door with papers to sign

II.

What scares us is their uniforms  
their uniform trucks and their uniform masculinity  
the uniform air of their unified occupation  
the un-uniformity of their money uniform cash flow  
ignitable youth with muscle  
calling it water and buying us off to drink

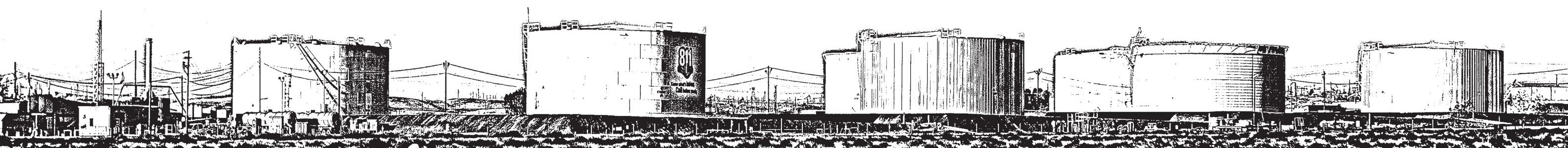
III.

What scares us is we have laws to protect us  
but they buy off the laws  
they buy off the commissioners who regulate  
the laws that protect what we have to live with  
they write the fine print loophole  
a small opening through which small arms may be fired  
the scary part is we know how to read

IV.

It scares us we don't know what to do  
we don't know who to talk to about what scares us  
we don't know who to contact  
we don't have a number and when we do we get referred  
we get re-routed we get put on hold  
we get frustrated then we start yelling saying things we can't explain  
that's what scares us how angry we've gotten with no one to explain  
it will go away it won't go away like it doesn't matter to anyone  
except our neighbors when they used to be our friends  
except our families when they used to be our friends  
except our friends when we didn't live under occupation  
especially our friends who signed and moved away  
what scares us is our daughters

from THUMB NOTES ALMANAC: Hitchhiking The Marcellus Shale  
FootHills Publishing, 2016, craigczury.com



## RE:PEAT

### LAYERS OF PEAT IN NORTHERN FINLAND, A LOOK AND LISTEN

Anne Yoncha, Oili Tarvainen, Anna-Liisa Välimaa, and Anne Tolvanen

*Re:Peat, Layers of Peat in Northern Finland, a Look and Listen* is a current EDUFI Fulbright Finland Fellowship research project by visual artist Anne Yoncha and science researchers Oili Tarvainen, Anne Tolvanen, and Anna-Liisa Välimaa of Natural Resources Institute Finland (Luke), composer Daniel Townsend of University of Florida, and Gerard Sapés of University of Minnesota, culminating in an upcoming exhibition in April 2020 at Gallery MABD in Oulu Finland, with a potential future site-specific event at Latvasuo & Pikkusaarisuo peat extraction sites in Northern Ostrobothnia Finland.

#### PROJECT OVERVIEW:

*Re:Peat* aims to explore the often-hidden structure of peat and provide a new perspective on how we perceive and value post-industrial landscapes. Anne Yoncha made paper surfaces from plants sourced at the extracted site, using a small-scale paper-making process as a nod to Finland's paper-making industry (Fig. 1), and has experimented with using other materials from site for mark-making (Fig. 2). Attaching transducers to these surfaces allows the handmade paper—made from novel ecosystem components—to become speaker surfaces, playing sounds of the site. Anne then used hyperspectral imaging of core samples representing restoration treatments in post-extraction peatland study sites to generate a graphic score. By sonifying this data a cappella, listeners may be able to hear differences between untreated soil in the left ear and soil which has been de-acidified with a peat-ash treatment (the residue from burning peat for fuel) in the right.

The sound component is generated from hyperspectral images of core samples (Fig. 3), taken with Specim FX-17 (Specim, Spectral Imaging Ltd) hyperspectral camera using wavelengths of 900 – 1700 nanometers (nm). By looking at patterns in the known water absorption band at 1450 nm using Spectrometer PSR+ (Spectral Evolution, Inc; Fig. 4), we can see differences between healthy plants (green) and plants experiencing drought (brown)—a reflectance pattern which can also illuminate patterns in post-extraction peatland soil. Three wavelengths are assigned to three vocal tracks (red: 1650 nm, green: 1450 nm, blue: 1102 nm), so higher reflectance equals higher pitch. Evenly-spaced triad intervals in parts of the sample with higher water content may indicate a healthier potential marshland ecosystem, and dissonant chords in drier areas may indicate a less viable novel ecosystem (Fig. 5).

Imagery is sourced from microscopic photographs of hyaline cells in sphagnum moss, the empty space which allows the plant to store water, creating an anaerobic environment and engineering an ecosystem which is inhospitable to competition and allows the sphagnum to thrive. Anne Yoncha hand-embossed the handmade paper with laser-cut plates, leaving impressions of the cellular forms which used to be on site. (Fig 6 and 7).

Using a graphic notation format in the tradition of artists like John Cage and Cathy Berberian, we collaborate with U.S. composer Daniel Townsend as well as a potential future collaboration with Risto Laitinen the leader of Tuira Chamber Choir in Oulu, Finland to create an intertwining choral voicing of this data—literally inserting the human voice into this data about ecosystems we have altered.

#### BACKGROUND:

Peat, made of decomposed sphagnum moss, is an important source of heat and jobs in north-central Finland, and a complex extraction issue. Currently,



Fig 1: Handmade analog-process paper with plant fiber sourced from extraction site, embossed with image of hyaline cells ("dead" space in sphagnum moss which creates the anaerobic peatland ecosystem) embossed using laser-cut microscope image as plate (Anne Yoncha, Luke)

peat provides a majority of fuel for Oulu's Toppi-la Power Station, a combined heating and power (CHP) plant which uses a continuous underground water heating system throughout the municipality—hundreds of kilometers. Peat is mostly harvested from mires drained in the 1970s as part of a government initiative to increase timber production. On the coldest days, truckloads of peat are delivered every ten minutes to the power station. While Finland has some of the most advanced CHP systems in the world—probably because its climate demands them—Oulu municipality aims to phase out peat use in the next few decades. This move will require a move to a new power plant, as the current furnaces require a specific ratio of wood to peat matter to function.

While peat is technically a biofuel, it is not a renewable one. Sphagnum builds up slowly (humicating into peat at the rate of one millimeter per year, or less), engineering over centuries or millennia an acidic, water-logged desert in which it is one of the few life forms which can survive and thrive. It also sequesters carbon and preserves climate data in the form of pollen molecules (sometimes 50,000 per gram of peat). The study sites for this project underwent two to three decades of extraction, which

ended in 2014 and 2015, and even if it is possible for peatland to regenerate, no one knows how long that would take. A series of long-term studies explore alternative ways to rehabilitate these landscapes.

Revegetation of the peat extraction area is demanding because the peat layer left at site after extraction is devoid of plant seed and can be rather thick, acidic, and low in nutrients. Peat ash has been used to fertilize these areas to quicken revegetation, enhance tree growth, and control erosion. In the present research projects one aim is to reintroduce local plant species that domestic reindeer can use in their diet (Latvasuo) and use sphagnum moss cuttings to promote the secondary succession of peatland vegetation (Pikkusaarisuo). Without human assistance the regeneration of vegetation would take decades and the extraction area would continue as a carbon sink.

Hyperspectral cameras can see the invisible; they capture both the visible light range (about 380–740 nm for human eye) and wavelengths that human eye cannot see. Hyperspectral imaging is a technology combining imaging and spectroscopy. Each material, due to the difference of chemical composition and inherent physical structure, reflects, scatters, absorbs, and emits electromagnetic energy in distinctive patterns at specific wavelengths. This unique characteristic of an object, called spectral signature or spectral fingerprint, can be identified with hyperspectral imaging. Hyperspectral imaging enables simultaneous detection physical and geometrical features of the product including shape, size, appearance, and color.



Fig. 2: Handmade dye altering traditional iron gall ink recipe using tannic plant matter from extraction site, and altered paint mixed with peat ash, a sandy substance created as an industrial by-product from peat burning, and later used as a restoration treatment to neutralize soil pH (Anne Yoncha, Luke)

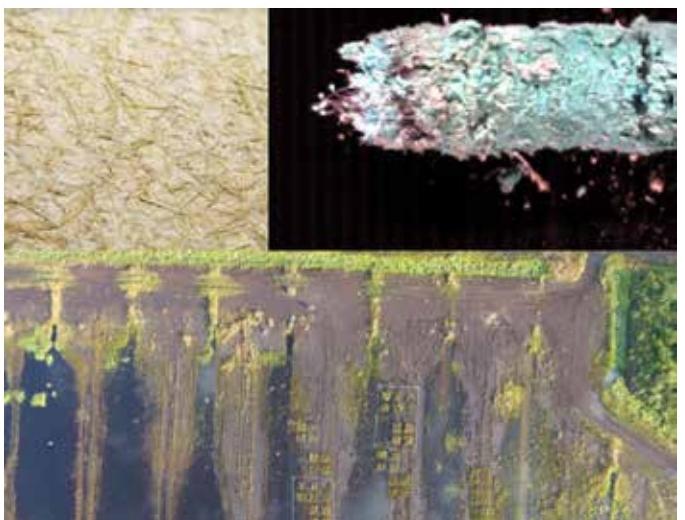


Fig. 3: A false-color image from hyperspectral camera (Specim FX 17, Specim, Spectral Imaging Ltd, Finland) data of core sample taken from post-extraction peatland (Anne Yoncha, Luke)

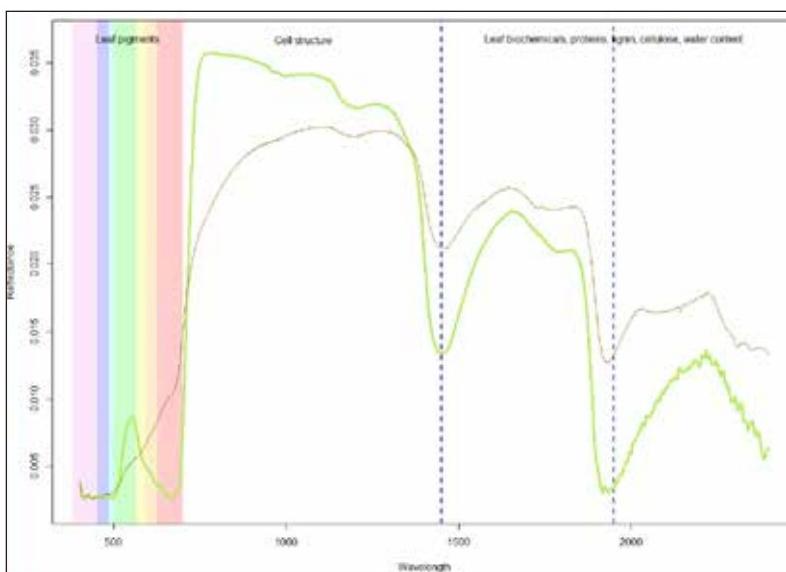


Fig. 4: A graph showing reflectance by wavelength of a healthy plant, including 1450nm water absorption band. The graph was generated using Spectrometer PSR+ (Gerard Sapés, University of Minnesota)

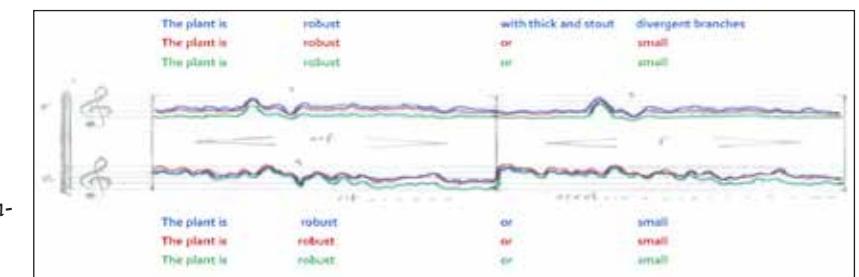


Fig. 5: Part of a page of graphic score using reflectance data collected with Specim FX-17 camera, lyrics sourced from a taxonomy of Finnish sphagna species (Anne Yoncha, Luke)



Fig. 6: A detail image of drawing combining physiological structure of sphagnum moss mat (extracted ecosystem) with Calamagrostis species growth (novel ecosystem), using gouache, graphite, and ink made from plants and water from site, aiming to illustrate murkiness of potential distinctions between 'natural' and 'artificial' in this ecological system (Anne Yoncha, Luke)



Fig. 7: A laser cut collagraph plate with negative space representing hyaline cells, the 'dead space' in sphagnum crucial to creating the characteristics of peat and peatlands (Anne Yoncha, Luke)



"I THINK THE BEST ART FEEDS THE SOUL OF CIVILIZATION. THINK ABOUT ALL OF THE ART, FROM DAY ONE, THAT HAS TRANSCENDED WARS, FAMINES, THE FALL OF EMPIRES. I THINK THAT ARTISTS CAN DIRECTLY AND INDIRECTLY ADDRESS THIS EXISTENTIAL MOMENT."

—RICHARD MISRACH



Above: Lawrence Gipe, *Bisbee*, large version, 2012–13, oil on unstretched canvas, 84 by 120 inches; Previous page: Lawrence Gipe, *Russian Drone Painting #1 (Mir, Siberia)*, 2018–19, oil on canvas, 72 by 96 inches



Lawrence Gipe, *Study for Bisbee*, 2012, oil on panel, 14 by 17 inches



David Maisel, American Mine (Carlin, Nevada) #2, 2007

Excerpt from  
**UNDERMINING**

Lucy R. Lippard

Somewhere in an indeterminate time zone between the Old and New Wests loom the massive outdoor sculptures dubbed earthworks in the late 1960s, now more broadly defined as land art. In the U.S., the best known of these sculptures drawn or cut from the earth itself, or made from its products, are Robert Smithson's Spiral Jetty, Nancy Holt's Sun Tunnels, the late Walter De Maria's Lightning Field, Charles Ross's Star Axis, James Turrell's Roden Crater, and Michael Heizer's Double Negative and City Complex—titles indicative of the ambitious visions driving them. All of the artists are white; all but one are men (sporting cowboy boots and ten gallon hats), as it is rare for women artists (Holt is the exception) to raise the thousands of dollars it takes to create such monumental works. Three of those listed above focus on the heavens; three have been under construction for some thirty years; one has been changed constantly by nature during its forty-year existence. All are endowed with extraordinarily beautiful surroundings and enhanced by weather, seasons, light and shadow. They surrender scale to the adjacent spaces, while drawing their emotional power from distance—distance from people, from environmental issues, and even from places. Land art tends to be site-specific but not overtly place-specific. Local geology, history, and identity are secondary, if acknowledged at all. Local residents are considered primarily in their roles as workers and incidental audiences. The on-site viewer is as likely to be deeply affected by the landscape as by the art object. It is this combination that is so compelling.

Most of us envision rather than visit the classic sites, where open space becomes a kind of mat within the frame around the photograph. Even if we have actually seen them, our impressions are mediated by the glamorous aerial photographs in publi-

cations, which are critical to earth art's esthetic impact and dissemination. Early land artists without frequent access to the "timeless" western deserts often adopted readymade pits (quarries in New Jersey, for instance), where the "timeliness" of nearby skyscrapers could be ignored. Smithson, Michelle Stuart, and Charles Simonds, among others, employed these geographically ambiguous sites as temporary substitutes for the West. Their works are sometimes inspired by the ruins of great monumental civilizations of the past. Some also visited, and lusted after, the gigantic western open pit mines (epitomized by the Santa Rita/Chino pit in New Mexico, the Birmingham pit in Nevada, and the Berkeley pit in Butte, Montana). Aside from their visual impact, these awesome earthworks, created by Kennecott Cooper, Rio Tinto, the aptly named Anaconda, and other global giants, also raise questions about the sustainability of the classic artworks. How does Heizer's Double Negative, for example—the biggest gully around—protect its matrix from the erosion that cuts through every arid western landscape, where roads, trails, and even animal paths can become running streams and then harsh arroyos when the infrequent rains descend?

"One's mind and the earth are in a constant state of erosion," wrote Smithson, a New Jersey native and one of the originators of the earthworks genre. It is impossible to talk pits in an art context without confronting his influential presence/absence; his romantic attraction to eerie, dreary, post-industrial landscapes; and his paeans to entropy. Although we often disagreed forty years ago, I now find Smithson's preoccupations with mirrors, pits, geology, the West, sprawl, and entropic suburbs reflected in my own life and work. And I am hardly alone. Smithson is the only one of his generation of land artists in the late 1960s whose ideas, disseminated through his compelling writings, seem particularly relevant and provocative today.

Smithson's first proposed earthwork, in 1966, was Tar Pool and Gravel Pit and just before his death he



Nancy Holt, *Sun Tunnels*, 1973–76, Great Basin Desert, Utah, concrete, steel, and earth. Photograph by Hikmet Sidney Loe.

was trying to persuade Peabody Coal to fund a reclamation piece. In his 1967 *Tour of the Monuments of Passaic NJ*, he wrote about a gigantic parking lot that covered old railroad tracks, dividing the city like two sides of a mirror, and noted how full of “holes” prosaic Passaic seemed in contrast to “solid” New York. He liked to quote his friend, sculptor Carl Andre: “A thing is a hole in a thing it is not.” Smithson was simultaneously involved in the place and self-consciously removed from it. Views, or vistas, interested him less than what was underfoot. When he and Nancy Holt visited me in coastal Maine in 1972, he peremptorily dismissed the sparkling ocean view and turned his attention to the geological history of the rocks on which we stood. Like Icarus, Smithson’s grand ideas ended tragically in 1973 when his small plane plunged to the earth as he was overseeing a Texas earthwork in progress.

Smithson’s account of finding the Salt Lake site for Spiral Jetty (the best known earthwork in the world, though it was underwater for decades) sounds like the reporter’s description of the Zuni Salt Lake: “a transplanted segment of crumbling New Jersey industrial shoreline,” but Smithson embraced rather than deplored industrial detritus.

At first, he couldn’t get to the “wine red” Salt Lake because of Keep Out signs and angry ranchers. (Welcome to the West.) The next day, he recalled, “We followed roads that glided away into dead ends. Sandy slopes turned into viscous masses of perception ... an expanse of salt flats bordered the lake, and caught in its sediments were countless bits of wreckage ... The mere sight of the trapped fragments of junk and waste transported one into a world of modern pre-history. The products of a Devonian industry, the remains of a Silurian technology, all the machines of the Upper Carboniferous Period were lost in those expansive deposits of sand and mud.” It was an epiphany, with orgasmic overtones. “From that gyrating space,” he continued, “emerged the possibility of the Spiral Jetty .... My dialectics of site and nonsite whirled into an indeterminate state, where solid and liquid lost themselves in each other.”

When land art was new, bringing provincial New Yorkers out of their lofts and into the hills, the expansion of consciousness it offered was both experiential and esthetic. Ideally part land and part art, it is best located deep in place, where one comes upon it unexpectedly, like ruins and rock art—poi-



Owen Gump, *Access Road, Cortez Mine Complex, Lander County, Nevada*, 2018, Pigment Print on Baryta Paper

gnant reminders of human agency and time’s victories. The viewer, like the artist, is so awed, so sensitized, so aware of seasons and materials, space and wildlife, that the work truly co-exists with the place it creates. Religious undertones and the nineteenth century “sublime” are part of the attraction. Artists were thinking on a grand (sometimes grandiose) scale. Forty years later, climate change, shrinking resources, threats of drought, and federal administrations bent on destroying the environment for corporate gain have changed the rules of the game.

In the mid-1990s, I called a talk I gave in Marfa “Land Art in the Rear View Mirror,” because by then I had gone on down the road. Cultural geography and the politics of land use have replaced land art in my windshield over the years I’ve been living in the West. My views haven’t changed because I have less respect for the older work, but because the better I know the New West the more my attention is claimed by peripheral vision—by the side-of-the-road shows, by life on the land. I argue now for the nearby, a microview of land and art, grassroots

connections rather than macro pronouncements. In fact, I’ve come to the reluctant conclusion that much land art is a pseudo rural art made from a metropolitan headquarters, a kind of colonization in itself. It offers an antidote to an urban landscape crammed with art and visual competition. In a rural setting, however, land art would more often entail subtractions (of “ranchettes” dotting the open landscape) than additions. The land art we know best in rural New Mexico is abandoned adobes, trophy homes standing out like sore thumbs in this beige landscape, and aging vehicles nobody can afford to haul away.

When I was a city dweller, I welcomed visual extravagance, graffiti, oddities, or subtle alterations in my already hectic daily surroundings. Public art belongs in towns, places where people interact with the built environment on a frequent, familiar, pedestrian basis where art can literally inform or enhance a neighborhood or public domain. The task of land art, on the other hand, is to focus landscapes too vast for the unaccustomed eye to take in, or to

give us views into the cosmos, connecting the places where we stand with the places we will never stand.

Significant objects have their place in the art world. It remains to be seen if they still have a place in land art. There is a point where artists too must take some responsibility for the things and places they love, a point at which the colonization of magnificent scenery gives way to a more painfully focused vision of a fragile landscape and its bewildered inhabitants. The land is not separate from the often harsh realities of lives lived upon and around it. A land art in the New West could acknowledge the rough edges as well as the romance. It could be integrated into a cultural landscape, which is a forever changing production featuring vegetation, wildlife, water, and human agency. A vernacular land art might include commemoration that looks to the smaller scale, land-based notions of nature, remembering small farms and common lands, the disappearing histories of places and ecosystems.

I have to admit that today my favorite art in the land is not contemporary but aboriginal earthworks—rock art (petroglyphs and pictographs), earth mounds, geomorphs, the ruins of ancient puddled adobe towns found by roadsides, on golf courses, and in the most remote deserts, forests, and canyons. Where contemporary land art demands all the attention, rock art quietly absorbs us into its place, even when we understand very little about the messages we are getting. Although individual images stand out, they are most evocative in relation to each other and to the place and clues they offer about the cultures that created them. (Many of these sites are still utilized ceremonially.) And of course it is easier to identify with the people who were once relatively peaceful stewards of that particular landscape than with today's property owner, who is likely to appear with a rifle and arrest you for trespassing.

"Adventurers" from more populous parts of the country and abroad forge their way over bumpy dirt roads, deciphering labyrinthine directions, to see the classic earthworks. They have become trophies on

the art tourism checklist and attract a rarified coterie, contributing to regional economic development while also calling attention to the fact that many famous western landscapes are surviving precisely because of cultural tourism. The Land Arts of the American West programs at the University of New Mexico and Texas Tech, led by artists Bill Gilbert and Chris Taylor, offer students a temporary nomadism, a rugged art-making intensive, and a chance to consider not only art and non-art but also "forms of travel as different measures of the landscape," as Chris Taylor has put it. They explore old and new ideas in increasingly contextualized frameworks, stretching the initial tenets of land art with pop culture, humor, and new technology, inaugurating a whole new field—institutionalized student tourism.

The earthworks play their part as the myth of the Old West gives way to the mundane real estate realities of the New West in a region where the land itself is more compelling than any museum; or, more pessimistically, where protected land and beauty strips are "museumized" in a landscape marred by extraction and greed. Eventually, Star Axis and Roden Crater, already under construction for a more than a quarter century, will boast visitor centers and tourist facilities. The DIA Art Foundation's Lightning Field is meticulously stewarded, but even the sought-after overnights cannot cover its maintenance. Reservations for a six-person cabin must be made months in advance; supper and breakfast are provided and exactly twenty-two hours (from pick up in Quemado to pick up at the cabin) are spent on the site for a hefty fee. Photographs are not allowed. My own experience was somewhat tempered by the fine old time we had in the cabin after dark, which blotted out the feeling of full immersion I anticipate when wandering through a landscape, taking my time, picking my focuses. We expected no lightning in May, and got none, but as the light shifted and the sun set, turning the silver poles gold and then black, I was struck by how lonely earthworks are.



Jonathan Clark, Mine Tailings from Tuzigoot



Jonathan Clark, Canyon View Through Mine Ruins

## MEMORIAL

for Ed Dobb

klipschutz

It's too dark to read Chinese poems  
out here by the edge of the water.  
Sweat dries under my thin cotton shirt,  
pleasure craft blink white and red.  
Summer, take another final bow.  
Words I can make out, but which words  
are they? Not yours, not mine,  
although the book itself  
belonged to you for a spell  
before it became a burden  
to your son in his small house  
on Bernal Heights, bursting  
with three stampeding kids.  
Who would know and who would care  
if I make them up, anything  
to not think about you on this bench,  
surprised by the sudden gift  
of my wife's distant laughter  
punctuating her engagement  
with a child, your grandson  
as it happens, the one  
who never got to know you.

## THREE OUT OF FOUR

for Ed Dobb

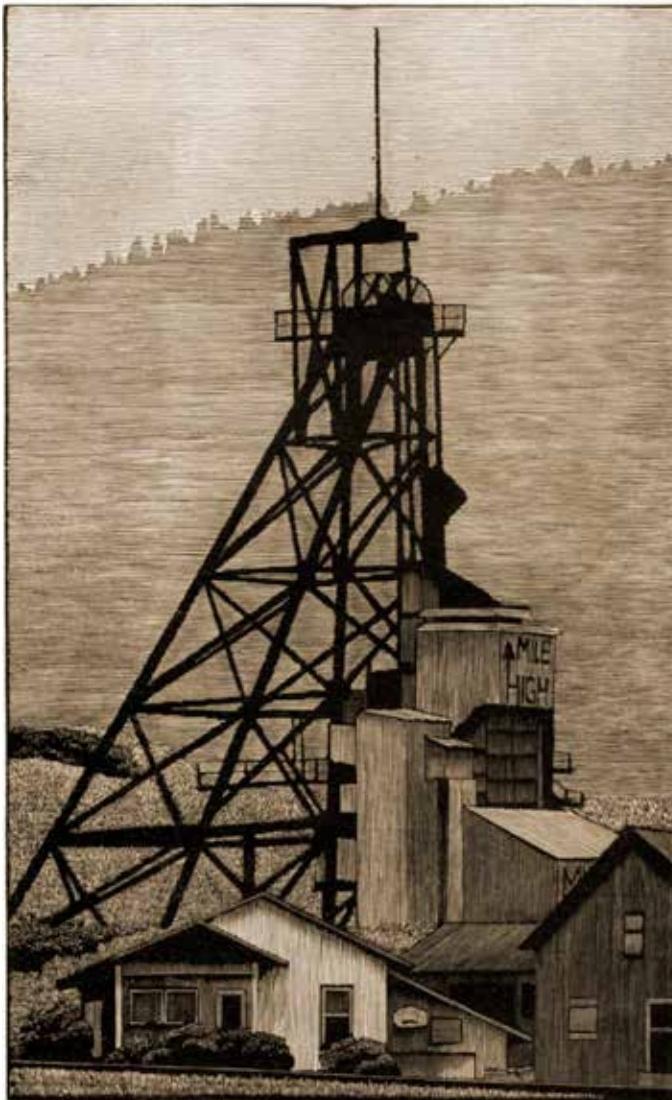
Elizabeth Herron

Ed's death shocked me  
left me  
feeling like a three-legged dog

though know how they are —  
cavorting and prancing,  
celebrating three  
out of four.

Do they ever suffer  
phantom limb syndrome?  
Do they ever gnaw the air  
where the old leg would have been?

Sometimes I feel my poems  
are just gnawing the air  
for what I have lost.



Richard Wagener, Mile High Mine, Butte, 2019, woodcut

## ALTERED STATE

### A PLACE FOR WILDLIFE, 2014 SYMPOSIUM

Monte Dolack

Montana has a notable and sometimes volatile relationship with its industrial legacy. Blessed with an unusual abundance of natural beauty and resources, the Treasure State's legacy includes mining, timbering, coal, oil and gas extraction, ranching, and real estate development. A powerful tension exists between the natural and diverse Montana landscape and the civilization that has been created here. Vast wealth for a few and jobs for many have been a result of this notable heritage and continues as we advance into the future. Some of Montana's great natural beauty has been set aside in National and State Parks. Its abundant rivers and wildlife is astounding and draw tourists from around the world. Conversely, byproducts of industry and development include water and air contaminated with toxic waste, species loss, and the introduction of invasive plants, fish and animals.

When Lewis and Clark and the Corps of Discovery passed through the area now known as Great Falls in 1805, they described wildlife sightings and encounters that surpassed anything else they would see on their journey. The area was also the Blackfeet Nation's buffalo-rich hunting grounds. This American Serengeti would soon become an industrial hub with little of the profuse wildlife remaining by the 1950s, when I was growing up there. The Great Falls of the Missouri became a series of dams powering the copper refinery, which boasted the tallest smokestack in the world. The Anaconda Company smelted the rich ores of Butte and made most of the copper wire that would link the world's first major communication network.

My grandfather, Steve Dolack, was a Slovak immigrant who started his own coalmine in Belt ap-

proximately 1914. My father, Mike Dolack, worked for more than thirty years at the Great Falls Anaconda copper refinery. After graduating from high school, I too worked at the smelter in Great Falls during summers while attending college. It was a good paying job and an education into how mineral rich ore from Butte's mines was turned into copper and other metals.

Because of my family history in mining, it seemed natural that the materials of copper and coal might be interesting to integrate into the art making process. Like a painter's palette, there is a full spectrum of colors exposed on the sidewalls of the colossal Berkeley pit in Butte. The toxic water, which has a rich concentration of dissolved metals, forms the lagoon in the bottom of the pit. The colors of the lagoon change from red to turquoise depending on the time of day. In 1995 a large flock of Snow Geese died as a result of exposure to the lethal effects of alighting on the water, which they mistakenly misidentified as a normal lake. But there is something alive in there. A team of researchers has recently discovered microscopic organisms living in the contaminated waters of the Pit.

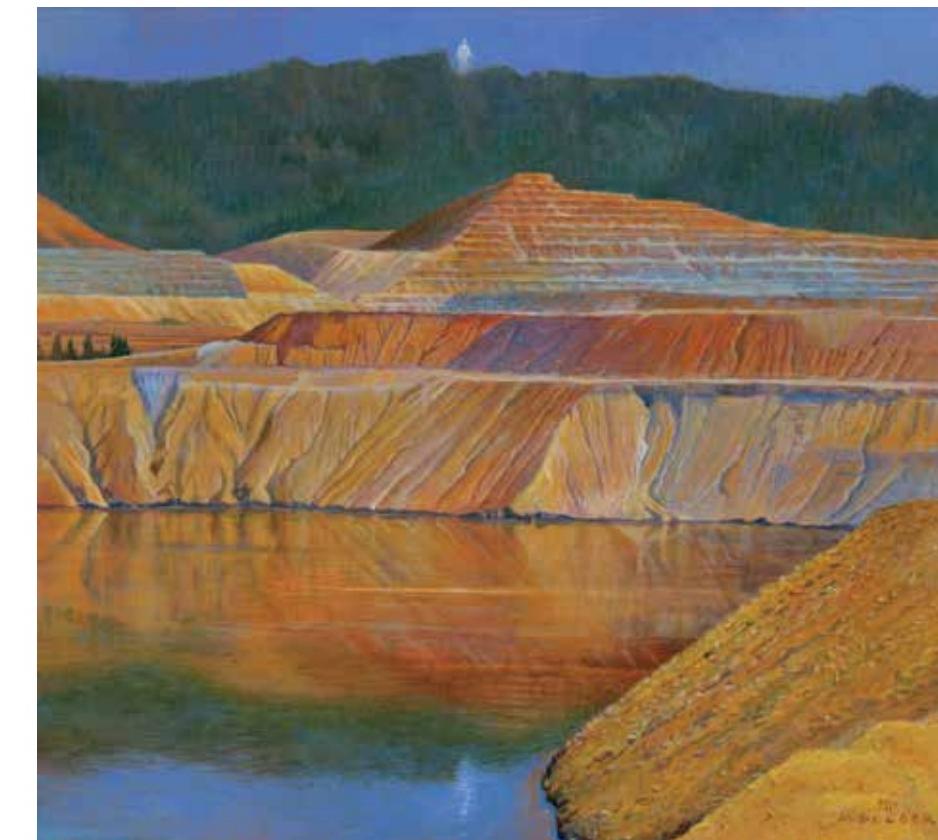
Yellowstone National Park is one of the few places on earth where similar colors to those of the Berkeley Pit can be found occurring naturally. These hues are the fabulous results of volcanism and thermal water with adapted pigmented microorganisms and have long attracted painters and photographers including Thomas Moran and Ansel Adams.

Many of these paintings are on copper panels allowing some of the iridescent quality of the copper to show through multiple thin paint glazes. The making of constructions and sculptures, which are assemblies of various found materials, also relate to our industrial and natural resources.

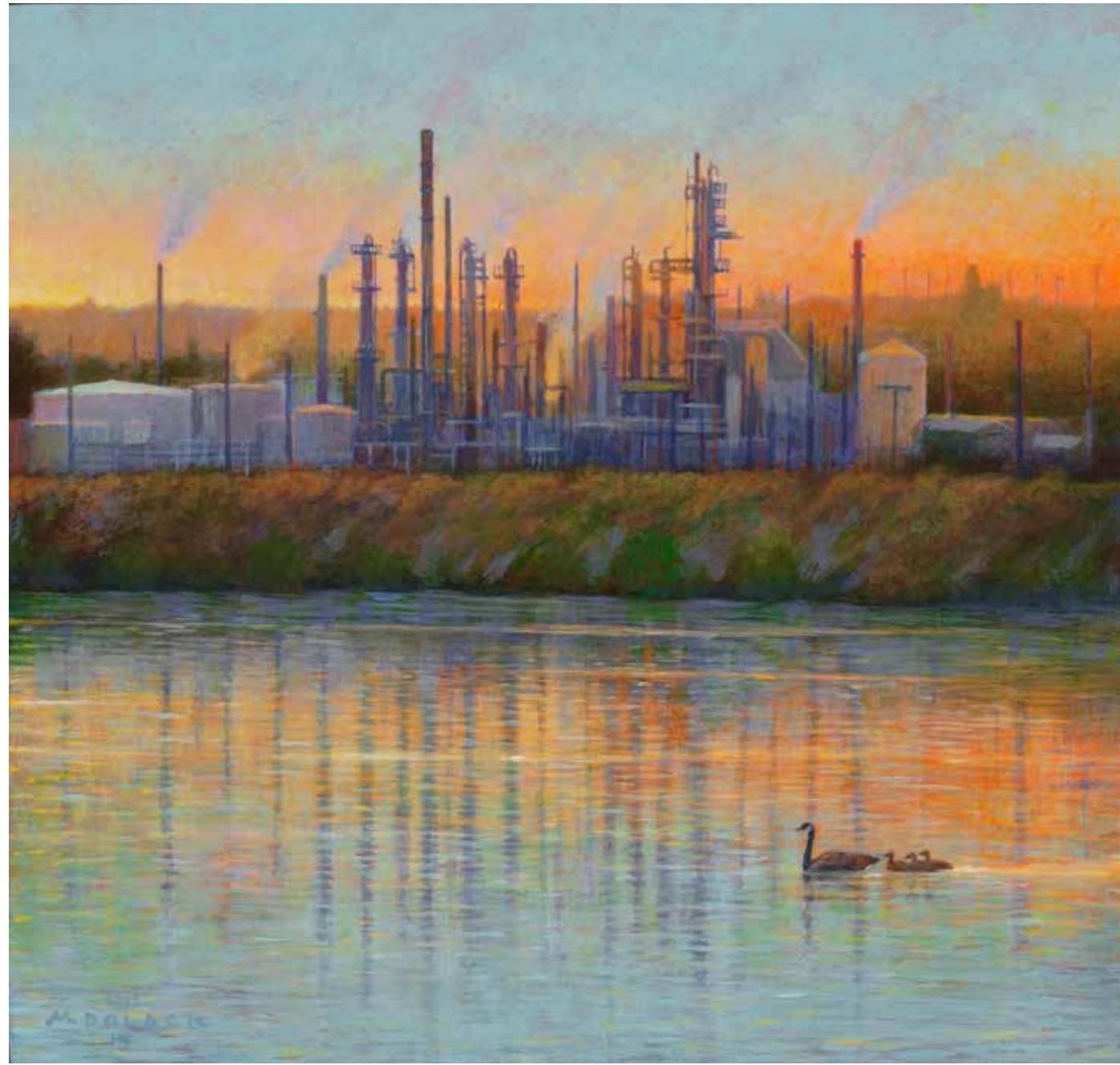
The problem in making these paintings has been how to find the irony and beauty as well as honesty and truthfulness and not lose one's sense of humor. Almost everywhere I look in Montana there is subject matter that speaks of our altered state.



Monte Dolack, Occurrence, 2013, acrylic on copper, 10 by 9 inches



Monte Dolack, Sacred and Profane, acrylic on copper, 12 by 11 inches



Monte Dolack, *Oil and Water*, 2013, oil on copper, 10 by 9 inches



Monte Dolack, *Horizon Lines*, 2020, acrylic on canvas, 48 by 36 inches

## DISAPPEARING EARTH

—for Virginia, Minnesota

Sheila Packa

Beneath the map, a bolt  
of heavy lightning  
reached into pre-protozoic time  
and threw a vein of iron into  
the molten ground before the ice age

—we mine it.  
The river winds like threads  
around the coordinates.  
Railroads stitch across the grid.  
Towns that sprung up around the open pits  
and roads that were built—move.

In Hibbing, the Hull and the Rust  
and the Mahoning  
became one mine.  
The neighborhood teetered over the edge.  
Houses were lifted by jacks and  
travelled south somewhere.  
The hotel slid off the back of a truck.

Now the highway has been called back.  
The companies own the mineral rights.  
The signature's affixed.  
Bulldozers tear up concrete  
and shovels take over beneath.

There is no there here—  
every map becomes obsolete  
on this temporary topography called tonnage.

## MY GEOLOGY

Sheila Packa

I excavate these words from a vein of iron  
from stones broken  
beneath old growth  
from the open pit — lit by dynamite  
by men whose lives are punctuated by midnights  
who drive new cars to the plants  
the crusher and agglomerator  
later suffer mesothelioma.  
I drive in acid rain  
my compass gone awry  
through geomagnetic fields with four wheel drive.  
These words are test drills and core samples  
from the Boundary Waters.  
These words wrung from the whistles  
and wheels that turn.  
These words have never projected  
into board rooms.  
I have yet to yield these powers or capitalize.  
I have yet to see the returns.  
I claim my words from the broken  
English, damaged roots,  
Finnish syntax and geomagnetic fields,  
from Eminent Domain  
and small print, unreadable clauses.  
I find my vowels  
from labor contracts and mine dumps  
from factories and invisible contamination.  
My words, in the run off  
in open streams — oxidize  
form like tree rings  
in industrial circles  
heat in the smelters, pour like lava into steel  
form these rails that carry the trains  
these trains  
that carry this freight.

## **MEMORY / THE MINE**

Sheila Packa

I return but it's all excavation—me  
an employee of the organization.  
I remember a long road past a gate,  
a dead landscape.  
Dust. Noise. First the crusher and then  
where I worked, the Agglomerator  
with conveyors to the trains.  
First stop, the dry.  
A sink like a Roman fountain.  
Clothes blackened by taconite, yellow and white  
hard hats, coveralls, steel toed boots,  
safety glasses, the whistle  
starting and stopping each shift.  
For this, I'd propped myself on a ledge  
for the paycheck.  
Steel beams, high voltage. Dripping grease.  
One of the crew leaning on high pressure  
water hose, blowing dust out of the nose  
into a handkerchief, pushing spillage  
down the sloping concrete floors  
below rolling furnaces,  
swallowing salt tablets from dispensers.  
On a swing shift, counting  
days till the long weekend  
taking smoke breaks, and calculating  
what falling asleep on graveyards might cost.  
All night and day the trains came to load  
and carry to the ore docks.  
In the lunchroom I took from my lunch pail  
a paperback. Kept myself awake  
with coffee from my thermos  
avoided pellets and their third degree burns  
stared into the middle distance  
not the ends but the means —  
the first place I'd worked  
below the surface.

## **OLIVER MINE, WWII**

Sheila Packa

An all female crew  
in the pit on day shift—  
pickaxe, shovel, crowbar.  
They wear work boots  
men's bib overalls  
plaid wool shirts and beneath  
thermal underwear  
bras stained with iron ore.  
They tie their heads with triangle scarves.  
They don't mind getting dirty  
working in the mine while the men  
are off to war.  
In the pocket heavy with coin  
a flask, a pack of cigarettes  
a navy handkerchief.  
Lunch boxes gray as artillery.  
No heels to wobble  
after the whistle blows  
when they put a nickel in the jukebox  
in neon glow, dance  
to a love song  
fingernails stained by toil.  
Ton after ton loaded on rails.  
They went deeper  
after the dynamite,  
bent to the task and took out the soil  
they were standing on.



Michael Light, Earth's Largest Excavation, 2.5 Miles Wide and .5 Miles Deep, Looking West, 2006

## BINGHAM MINE/GARFIELD STACK 04.21.06

Michael Light

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Located at 8,000 feet in the Oquirrh Mountains twenty miles Southwest of Salt Lake City, the Bingham Canyon copper mine is the largest man-made excavation on the planet, its hole reaching more than half a mile deep and its rim nearing three miles in width. It has produced more copper than any mine in history. The mine's Garfield smelter stack, situated at the edge of the Great Salt Lake about ten miles away, is the tallest free-standing structure west of the Mississippi River, and is thirty-five feet shorter than the Empire State Building. It was the Guggenheim family that capitalized Bingham Canyon in 1906 to allow open-pit mining to begin there. The next year, the Guggenheims' American Smelting and Refining Company (ASARCO) built the Garfield smelter to refine Bingham's copper ore, and owned and ran it until 1959.



Michael Light, Side of the Pit, Looking East; Trucks Each Carrying 218 Tons of Ore, 2006



Michael Light, Garfield Stack, Oquirrh Mountains and Ancient Beach of Great Salt Lake, 2006



Erika Osborne, *The Chasm of Bingham*, 2012, oil on linen, 48 by 90 inches

## **AMERICA, I DO NOT CALL YOUR NAME WITHOUT HOPE**

after Neruda

*Dean Rader*

America, I do not call your name without hope  
not even when you lay your knife  
against my throat or lace my hands  
behind my back, the cuffs connecting  
us like two outlaws trying to escape  
history's white horse, its heavy whip  
a pistolshot in the ear. Lost land,  
this is a song for the scars on your back,  
for your blistered feet and beautiful  
watch, it is for your windmills, your  
magic machines, for your fists. It  
is for your wagon of blood, for your dogs  
and their teeth of fire, for your sons  
and the smoke in their hearts. This is for  
your verbs, your long lurk, your whir.  
This is for you and your fear, your tar,  
for the white heat in your skin, and  
for your blue bones that one day may sing.  
This is for your singing. This is for the past,  
but not for what's passed. This is for daybreak  
and backbreak, for dreams, and for darkness.  
This song is not for your fight but it is a song  
for fighting. It is a song of flame but not for burning.  
It is a song out of breath but a plea for breathing.  
It is the song I will sing when you knock  
on my door, my son's name in your mouth.



Erika Osborne, *Split Estates*, 2016, oil on linen, 32 by 48 inches

## ETIOLOGICAL SELF-PORTRAIT

Dean Rader

Not with a bang but a baby's breath  
not with a scream but a scratch  
not with the angel but its after-ash  
not with the dead but with their dreams:

we all want to rise up into that which  
we have only now begun to know—  
time might be a cup of tea  
or a hummingbird above the rosebush—

we can never be sure, just like now,  
after a day of fog and heavy gray  
we wonder about the sun in its little barrow  
of light and who might be pushing it.

Right: Erika Osborne  
*Hoover Gates*, 2011  
oil on canvas, 42 by 30 inches





Erika Osborne, *Westward*, 2012, oil on canvas, 20 by 42 inches



Erika Osborne, *The View Down Canyon*, 2013, oil on canvas, 36 by 60 inches

# LANDSCAPE

Julia Clift

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Any physical landscape, i.e., an area of natural land shaped by human intervention, is defined by the entanglement of its ecology, its socio-political history, and the plurality of stories told of it over time. How we conceptualize and represent landscapes matters, especially in the midst of our current climate catastrophe. This essay stems from research questions within my own studio practice; it offers an artist's perspective on issues that, I believe, bear widespread relevance today.

## 1. PEOPLE

Colin Woodard's 2011 book *American Nations* interprets the United States as a precarious coalition of eleven warring regions. Woodard tells U.S. history through the lens of tracking each region's evolution and migrations within the country over time, from the first arrivals of European colonizers to the present. The book was a revelation for me in that it gave language to a truth that I'd sensed of my country for years, particularly after the 2016 election.

I've always been fascinated by how, in the United States, different worldviews center around distinct, geographic regions. On a recent road trip from Philadelphia to Orlando, I was struck in North Carolina by bright yellow billboards punctuating the walls of foliage lining I-95, reading "Jesus is Savior," or more concisely, "REPENT." In South Carolina, a roadside field had been cleared for an enormous confederate flag. The views from my window seemed the perfect illustration of how landscape is more than land shaped by practical human needs; landscape is branded by the ideology of its inhabitants.

Trump country is beautiful. There's tension in the thought because the landscape's formal and political reality are at odds (for me, at least). There's an awkwardness to feeling moved by a landscape that's in-

timately tied to a culture far from one's own. I think the discomfort is telling; it suggests some reciprocity between a place and its people, it implies landscape's animacy. Another way to think of it might be that landscape is steeped, ontologically, in its human history. Mustn't any representation of a landscape, then—such as a painting or photograph—signify that landscape's socio-political placehood?

## 2. MODERN SIGHT & THE ANTHROPOCENE

In the summer of 2015, I was accepted to a month-long residency in a picturesque village in Northwestern France. My work was figurative at the time, but I decided to take advantage of the scenery and spent the month making landscape paintings. As the residency progressed, I found myself in a new pattern: upon discovering an attractive scene, a determined energy would kick in, a drive to capture it. Looking back, I wonder about this impulse of possession. It might be described as the desire to pin down some essence of nature, to cage it in a portable object for spectatorial consumption at a viewer's leisure. To be fair, I think my intentions that summer had much to do with awe. I wanted to transmit, through painting, the profound emotions that natural landscapes evoke in me. But I'd be lying if I didn't acknowledge the hubristic energy that was present as well.

Image-makers have both power and responsibility. We don't just reflect cultural movements, we can generate them. I often think of Thomas Moran and William Henry Jackson's sublime, romantic representations of American landscapes, which are widely credited with convincing Congress to establish the country's first national park (Yellowstone) in 1872. It was landscape imagery that transformed an actual place in the public consciousness, from undesirable wilderness to a land worthy of admiration and protection. To an extent, American painters are responsible for propagating the zeitgeist of Westward expansion.



Julia Clift, *American Space*, oil on canvas, 2020, 66 by 91 inches

In *The Panorama, History of a Mass Medium*, author Stephan Oettermann provides another historical example of landscape painters impacting how people view the natural world. In the late eighteenth century, popular panoramic paintings trained their bourgeois audience members on how to relate to actual landscapes from a privileged, elevated position; the paintings cultivated a taste for "getting a grip" on things, a grip that leaves what is observed undamaged, but surrounds and seizes the whole." Panoramic landscape paintings were symptomatic of, and reinforced, domineering attitudes toward nature.

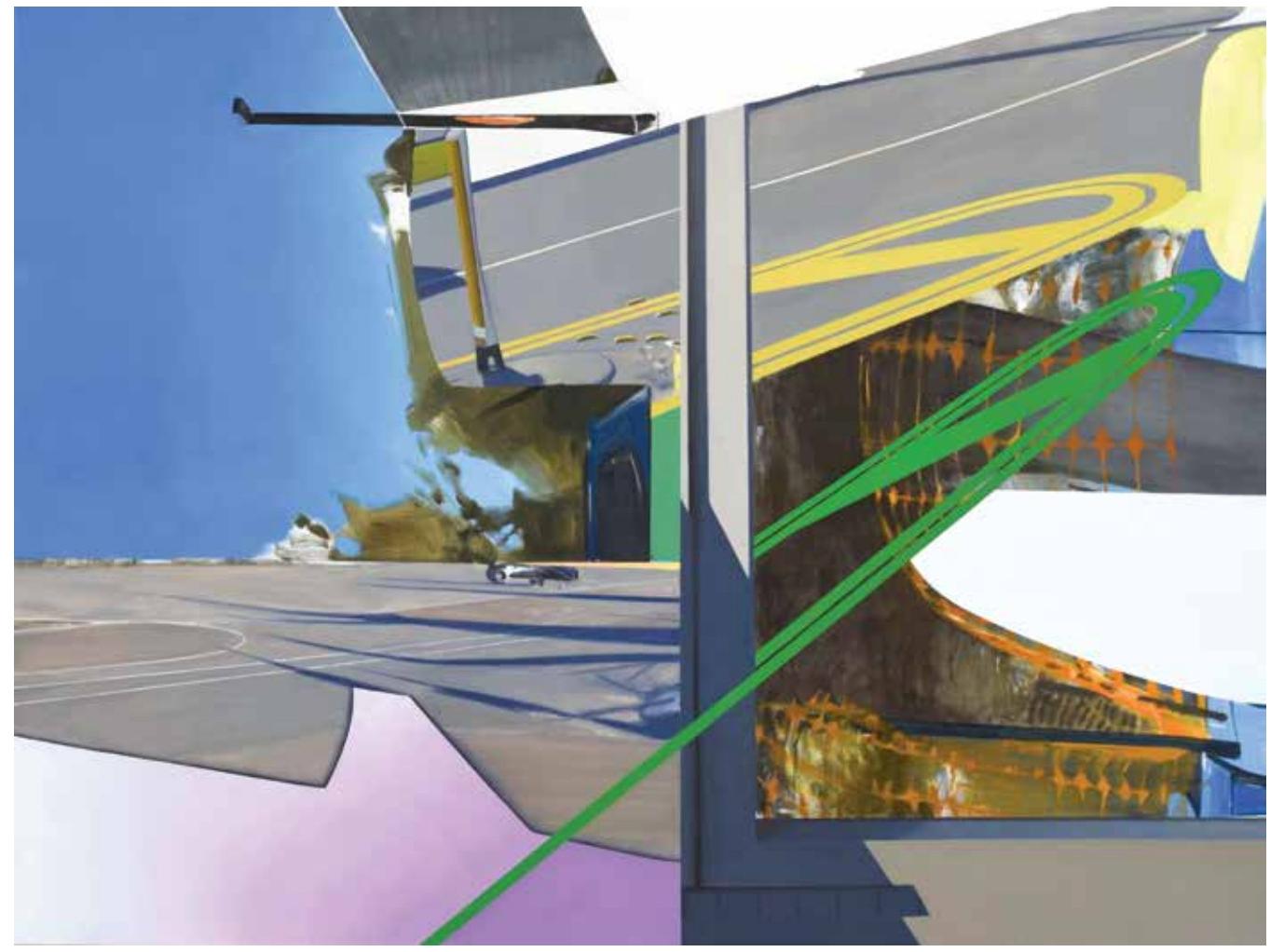
Oettermann sees panoramic perception of the actual world as central to modernity—the very culture that's led us to the uninhibited plundering of Earth's resources and a global mass extinction. It's at least plausible that images steeped in the modern

ethos of "getting a grip" on nature, like my own early landscape paintings, might sustain and advance a destructive worldview.

## 3. SPIRIT

There are two consequences of romanticizing natural landscapes that I'm currently concerned with, as an artist and an image-maker. One is the detachment of a natural landscape from its identity as a specific, historically situated place, or the glossing over of how landscapes are tied up with social politics. The second is the masking of nature's ecological reality, for one must see nature as ecology in order to adopt a mentality of stewardship.

For as long as I can remember, I have been sensitive to, and inspired by, landscapes' emotional tex-



Julia Clift, *American Space*, oil on canvas, 2019, 72 by 96 inches

tures. The first time I ever saw mountains, I was seven years old, on a road trip with my Dad. We passed through North Carolina after nightfall, and I made out their shadowy forms through the car window—I felt awash in joy. Different natural landscapes resonate different psychological notes within me, and, it seems, within others. My sentiments harken back to ideas about natural landscapes that nineteenth century Romantic artists and writers perpetuated, but such feelings needn’t be romanticizing. In everyday speech, to romanticize something is to raise it on a pedestal by way of flattening its complexities. Cannot one maintain an awareness of a landscape’s intertwined identities while letting herself be moved?

To be sure, the Romantics’ conception of natural landscapes as sites of universal truths conflicts with an understanding of landscapes as specific,

historically situated locations. But the notion of natural landscapes’ connection to the human soul or psyche, and the notion of nature’s sacredness, both of which have ties to the Romantics’ legacy, are not in themselves incompatible with an understanding of natural landscapes as historically situated places and as ecosystems. Robin Kimmerer is a botanist, writer, and indigenous American who advocates for the perception of natural landscapes as intimately, spiritually connected to humans in a reciprocal relationship. Kimmerer sees the health of such relationships as key to both ecological harmony and people’s psychological well-being:

*I once knew and loved a man who lived most of his life in the city, but when he was dragged off to the ocean or the woods he seemed to enjoy it well enough—as long as*

he could find an internet connection. He had lived in a lot of places, so I asked him where he found his greatest sense of place. He didn’t understand the expression. I explained that I wanted to know where he felt most nurtured and supported. What is the place that you understand best? That you know best and knows you in return?

He didn’t take long to answer. “My car,” he said. “In my car. It provides me with everything I need, in just the way I like it. My favorite music. Seat position fully adjustable. Automatic mirrors. Two cup holders. I’m safe. And it always takes me where I want to go.”

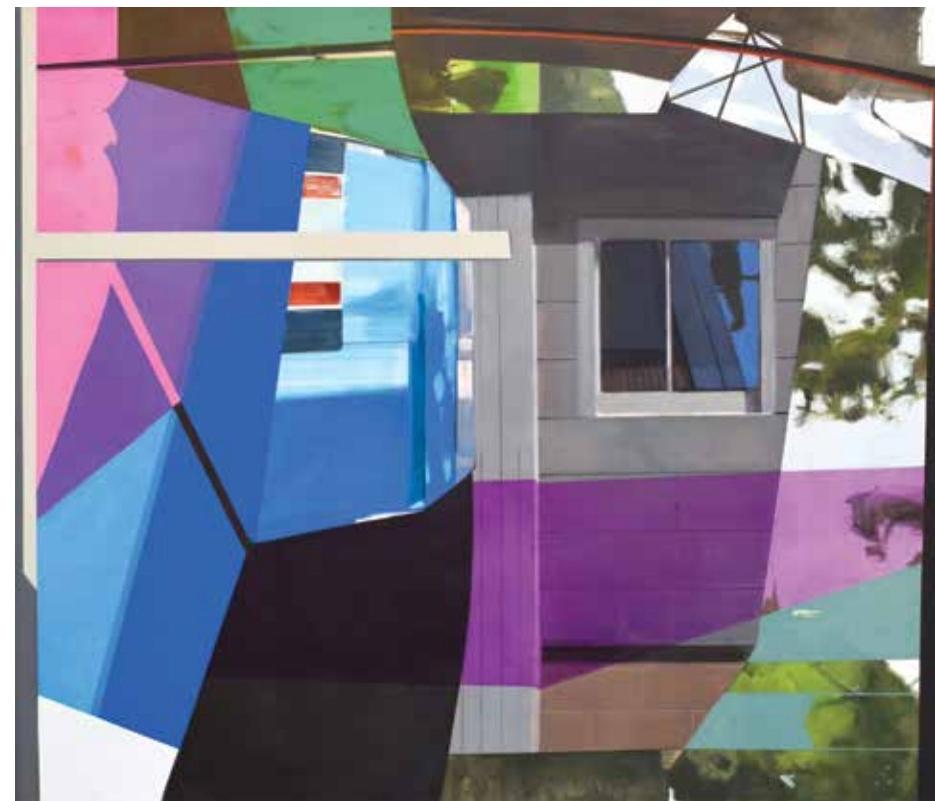
Years later, he tried to kill himself. In his car.

He never grew a relationship with the land, choosing instead the splendid isolation of technology. He was like one of those little withered seeds you find in the bottom of the seed packet, the one who never touched the earth.

I wonder if much that ails our society stems from the fact that we have allowed ourselves to be cut off from that love of, and from, the land. It is medicine for broken land and empty hearts.

While I am not a member of the Indigenous community, I deeply relate to Kimmerer’s words. At a time when so many humans increasingly experience the world virtually, I wonder if a useful path for landscape painting might be to remind audiences of the psychological or spiritual impacts of being physically present in a place.

One of my favorite films is Werner Herzog’s *Into the Inferno* (2016), a documentary about volcanoes. Herzog trains his lens on scientists studying volcanoes, and on people whose ancient religions impart volcanoes with a spiritual dimension. A sizeable



Julia Clift, *American Space*, oil on canvas, 2019, 72 by 84 inches

section of the film is shot in North Korea and addresses how the Kim family uses a claimed relation to Mount Paektu to legitimize their political rule. Throughout *Inferno*, Herzog intersperses footage of bubbling lava lakes and cascading pyroclastic flows accompanied by operatic music; these moments unequivocally revel in volcanoes’ beauty and sublimity. By implicitly defining volcanoes as the sum of their aesthetics, their scientific facts, their inscribed histories, and the meanings they’ve held over time, the film models a way of representing natural landscapes truthfully and responsibly in the twenty-first century.



Philip Zimmermann, Santa Rita/Chino Copper Mine, Santa Rita, 2004, photograph



Erin Wilkerson (Creative Agitation), Western Section of Unknown Mine in McKinley County, from the series "Extraction Settlement," acrylic on canvas, 24 by 34 inches

## WILDTIME

Sandra Dal Poggetto

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Northern California's coastal hills and valleys where I grew up are smaller in scale and gentler than the Rocky Mountains where I now live. As a girl, there was much to explore, imagine and discover in the chaparral and mixed oak forests that surrounded my home. The native peoples who had understood the land infinitely better than I were absent. Pomo, Wintuns and Wapo had lived in those hills for thousands of years but were never a topic of conversation at home or in my history lessons at school. Only later did I see and marvel at their intricate grass baskets woven to gather, process and store wild food-stuffs: oak acorns, wild oats, fish, game, berries, seeds and roots. The only Indian presence in my life was invented in Hollywood, seen on television. Like many children then, I enjoyed playing cowboys and Indians and usually chose the Indian role because I loved being bare-chested. My incessant, imaginative outdoor play marked me for the arts, not the sciences. And so, when the time came, I studied art at the University of California at Davis.

The renowned ceramic artist Robert Arneson often jibed me, as a student, for bringing my painterly investigations into his famed TB9, a corrugated metal-sided building that housed workspace for ceramic classes and his own studio. Two cavernous firing kilns were the heart of the building and Arneson, the brains. Signing up for independent study with Arneson was hazardous because as a Funk artist, and one who expressed strong political and social opinions in clay, he could be quite caustic in his criticism. Further, I had chosen to be a painter, and to be Funk was to be a descendent of Dada, irreverent, often ribald and mischievous opponents of the Western tradition of painting. But I was undeterred, and he let me be as I claimed a wall for my large abstract clay reliefs, which, once leather-hard, I cut-up

into blocks, arranged on the floor, and made drawings and paintings of them from various perspectives. When I graduated, Arneson asked if I was going to face down the wolves of New York; instead, I moved to Montana where the real wolves were.

Slowly I entered the enormous space of the inland West, where the land comes forward and people recede. With the land come the animals and birds, unfamiliar trees, grasses and forbs. I learned to hunt game birds—blue, ruffed and sharp-tailed grouse, pheasant—and mule deer, which took me ever deeper into the land. I learned where the animals live, what they eat, and the soils in which their food grows. I learned the shape of their beds and the contours of the land that holds their water.

I learned the weather they endure, the predators they suffer. I learned how their bodies are structured by literally taking their bodies apart. I learned to savor wild meat. In this way, I entered into what Ortega y Gasset described as primal engagement.

Through hunting, I experience the sensation of a place. My body becomes more permeable; my senses simultaneously relax and intensify. I become vividly conscious of the swell of a hillside, the shape of a meadow, the color and texture of wildrye, the snap of a twig under hoof, the chittering alarm of a squirrel, the chill and density of cold air. A breeze at my back, whoosh of thrush, flick of a tail. There are no words. I respond to these cues with caution, delicacy, discernment, patience, and then action.

Hunting in this way is not unlike my painting practice: situated in the forest or on the plains, charcoal in hand, I make marks with the stick of burnt willow. The impulse to make a mark is centered in my body, shaped by the moment when I hear the whistle of a red tail hawk, flap of raven's wing, drumming of a grouse, see a beetle labor over the white of my canvas, a butterfly's lilt, aspen leaves quivering. These sensory impressions move through my fingers, and tooth of canvas catches charcoal. These dark marks are also shaped by memory—years of



Sandra Dal Poggetto, Surprise Creek #1, 2017–2018, oil, whitetail deer hide on cardboard, 10 by 16 inches

seeing, hearing and feeling. If my attention flags, the mark is false.

Next comes the paint: a golden ochre wash brings the sun—light absorbed and refracted by grass or dust-glow in the air. Passages of translucent golden-green signal first growth or brown-green late season. Ochre-green decaying growth, blue-green plants still with water running in their veins. Umbers and siennas soil and stone, or not. Scrubby olive greens of deer browse, sage browns of grouse and sparrow shelter, piercing vanadium yellow of feathered calls, alizarin blue lake. Soft pastel marks tracks in ether and dust. Thick concentrations of oil paint—pockets of water and muck, the wet and heat of blood—animal and human absorbed by the dirt for centuries.

There are always erasures: charcoal, pastel and oil marks come and go, and come back again, like the day and the seasons; animals appear then with-

draw into the shadows; plants reach vitally for the light then shrivel and disintegrate, losing their once crisp edge; deer hair ripples over firm muscle, and months later lays on the forest floor disappearing into bird nests or scat; mayflies outlined by cerulean of sky vanish into the throat of a swallow; vernal ponds ebb and dry up, the moon waxes and wanes.

Moving along mountain flanks or grasslands, streams, or the edges of high mountain lakes—sensing color, texture, space, line, shape, light and dark, I come to know the fundaments of art. This knowledge is an intrinsic part of what it means to be alive.

I walk over the high plains near the Missouri River in central Montana, once home to the Blackfeet. Cattle have been allowed to overgraze. The land is



Sandra Dal Poggetto, *Deep Creek #1*, 2015, oil, Canada goose feathers on cardboard, 14.25 by 17.5 inches



Sandra Dal Poggetto, *Surprise Creek #7*, 2020, oil, dyed deer hair on archival cardboard

bare in places. Knapweed, low in nutrition, flowers. And from a distant, plowed field drifts a faint smell of Roundup sprayed on wheat crops. My hunting dog is in the lead. After a few miles, with shotgun in hand, I shimmy under a barbed wire fence onto better ground: blue grama and buffalo grass of differing heights rustle in the breeze, old growth at their base; coneflower and rabbitbrush mingle with the grasses; patches of wild rose offer tasty rosehips; and, in places, dried moss covers the soil indicating healthier ground. There are signs of rabbit or possibly hare. A foxhole? I pass an anthill, and a little beyond, see grouse beds under the sage and at my feet, the beginnings of a game trail. I pause for a while to scan the horizon that wraps wholly around me before following the trail and dropping into a steep-sided coulee, escaping the wind and technology's ever more sinister eye.

The stratified walls are covered by luxuriant grass and absorb sound. A plow cannot reach this place and there are no fences. My dog's nose is close to the ground following a scent that leads to a stand of berry-covered bushes. Eerily, silently she goes on point. I approach, but no birds burst from the cover, although we both know they have been here. We continue down the dry, narrow path marked with deer tracks. The coulee forks and I take the wider

arm that has more cover. On the right is a high, flat stone face. A site for petroglyphs? I come upon coyote scat laced with fur and bones and farther on find the feathered remains of a sharp-tailed grouse—the work of an owl, a coyote? As I descend into this crack of earth, animal and sapient commingle, tensions arise, potent and rich with complexities. Tint and tone, thick and thin of paint may capture them. A small stand of cattails grows in the grassy bottom. My dog drinks the water flowing from them. There is a fresh deer bed nearby, and I lie down to rest in this place of wildtime.



Sandra Dal Poggetto, *Targhee #1*, 2016, oil, Blue grouse feathers on cardboard, 30 by 35 inches

## DOWNHILL WHITE SUPREMacists MARCH ON SACRAMENTO

Tess Taylor

High in the Sierra  
green summer aspen

whisper to the lake.  
The snowpack glitters.

Over the passes  
Winnebago thunder  
  
out of the wide red flats of Nevada.

Huge crooked knuckles,  
the dark scree loom.

Deep in the roadbeds,  
the bones of the Irish

& Chinese workers  
whose lives were pitted

against one another  
to drive down & down

the price of their labor  
—who shattered their bodies

dynamiting these crossings—

blaze in their graves.

## TRAIN THROUGH COLMA

Tess Taylor

But will anyone teach  
the new intelligence to miss  
the apricot trees

that bloomed each spring  
along these tracks?  
Or the way afternoons

blazed with creosote  
& ponderosa?  
Spring evenings flare

with orange pixels  
in the bay-scented valley.  
Where in the algorithm

will they account for  
the rippling ponies  
that roamed outside Fremont?

When the robots have souls,  
will they feel longing?  
When they feel longing,

will they write poems?



Owen Gump, *Fence Line*, Northern Nevada, 2018, pigment print on Baryta paper



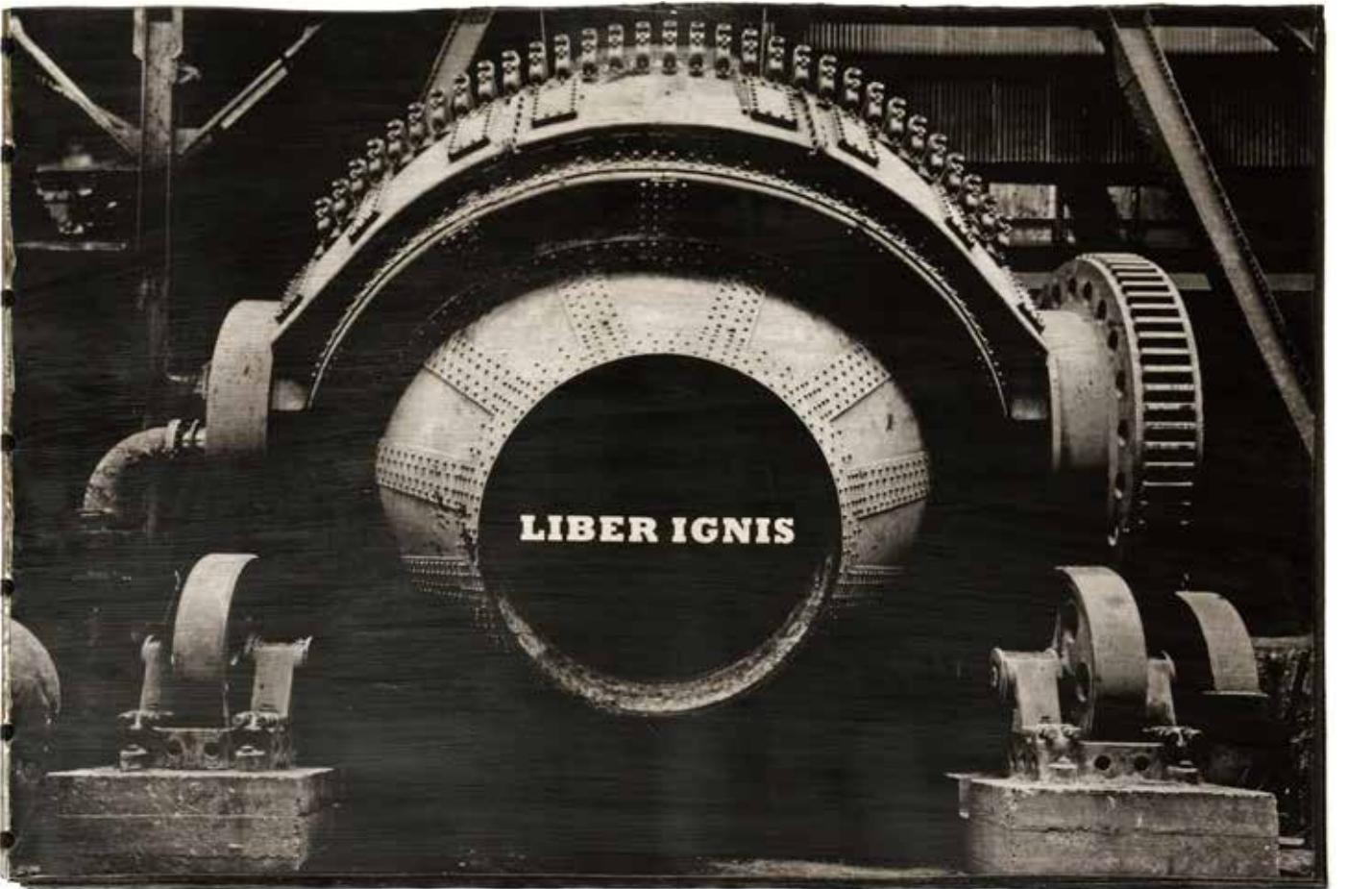
Owen Gump, *Untitled*, Storey County, Nevada, 2019, pigment print on Baryta paper



Owen Gump, *Mine Tailings*, Lyon County, Nevada, 2018, pigment print on Baryta paper



Owen Gump, *Tool Marks*, Bitterroot Range, Idaho, 2018, pigment print on Baryta paper



## PETER RUTLEDGE KOCH

with sixteen serial collage poems by

ADAM CORNFORD

book structure engineering by

JONATHAN GERKEN

LIBER IGNIS, the third volume\* in a collaborative project of appropriations, constructs, and inventions documenting the ongoing civilization of the American West

## WARNING: CONTAINS LEAD

\*HARD WORDS, NATURE MORTE, & LIBER IGNIS comprise the three-volume project

EDITIONS KOCH

WWW.PETERKOCHPRTERS.COM

## THE BOOK OF FIRE

Peter Rutledge Koch

The following is intended as a guide to the imagination and construction of an idea.

In May of 2013, during a visit to the Städelsches Kunstinstitut in Frankfurt, Germany I found myself in a small gallery saturated with ashes and grey shades of suffering. I felt I had entered into a set design for a reading of Baudelaire's poem "La Béatrice"

*Dans des terrains cendreux, calcinés, sans verdure,  
Comme je me plaignais un jour à la nature,  
Et que de ma pensée, en vaguant au hasard,  
J'aiguiseais lentement sur mon cœur le poignard,  
Je vis en plein midi descendre sur ma tête  
Un nuage funèbre et gros d'une tempête,  
Qui portait un troupeau de démons vicieux,  
Semblables à des nains cruels et curieux.*

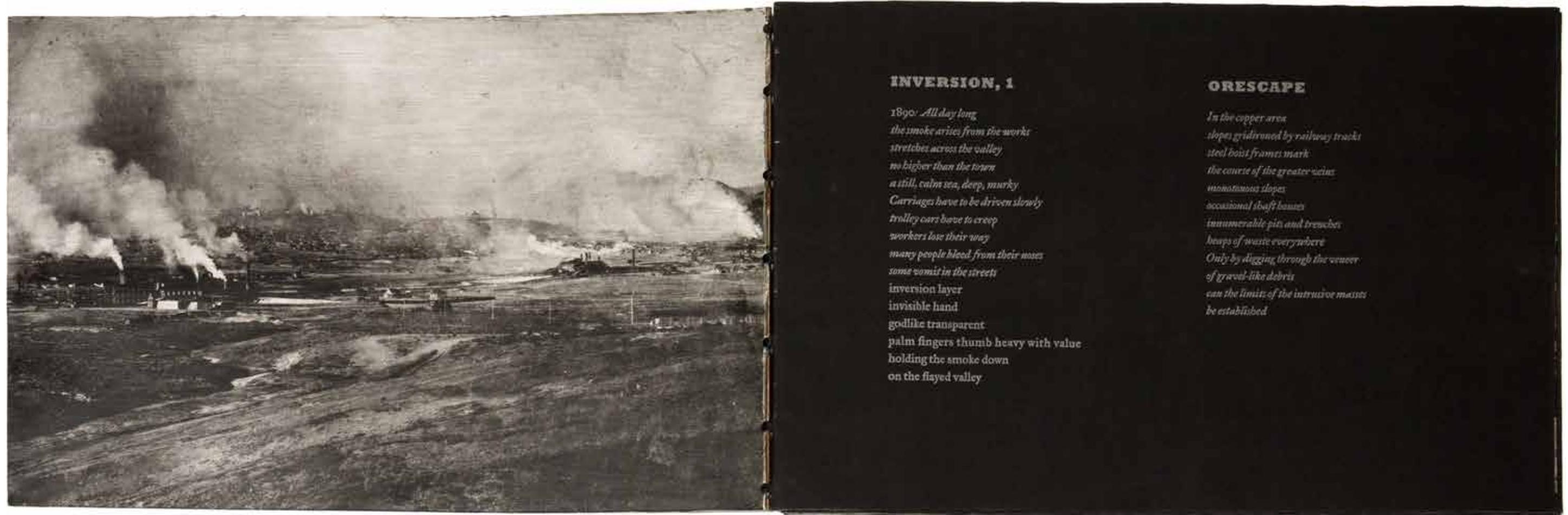
—Through ashen fields, burnt to a cinder, where no green thing grew,  
one day I lamented..."

I had chanced upon an exhibition of selected works by Joseph Beuys, Anselm Kiefer, and Sebastião Salgado, three artists deeply affected by the dark side of human nature. The massive lead sculpture Zweistromland, a shelf of mysterious impenetrable volumes by Kiefer, and Salgado's photographs of the Serra Pelada gold mine in Brazil converged on me with catalytic force while I stood transfixed in the gallery. A cast iron sculpture of a charred corpse by Beuys, possibly summoned from the artist's memories of being shot down over the Crimea during WWII, lay on the floor. I felt a sudden deep connection with these evocations of the terrible weight and power of exploitation, war, and the aftermath of suffering and devastation.

Struck with echoes from my own life reflected in the ruins that littered the gallery walls and floor, I was deeply moved. Born in Montana in the midst of the Second World War, I grew up surrounded by magnificent landscapes in various states of dereliction and decay. After the war the great gluttony for minerals abated and copper prices declined. The corporations withdrew, leaving ruins everywhere; ghostly smelters, abandoned mines, and where once great forests stood, burned slash and stumps remained. Landscapes of extraction and erosion filled my peripheral vision for years. The concrete and marble monuments erected in our municipal cemeteries and public parks to the war dead were but feeble responses to the terrible costs of that war. Now, seventy-six years after the invasion of Normandy (where my father was killed) I am bearing witness—pursuing my work in the archives of mining and smelting, appropriating images, and constructing my own memorials.

I left the Städelsches Kunstinstitut that afternoon clutching a notebook half-filled with sketches and plans for a Book of Fire. I began imagining a distorted ode to the drilling machines, hard-rock miners, crushers, furnaces, and railroad engines serving the "dark satanic mills" of William Blake's anthem "Jerusalem." The powerful engines of destruction, built to extract the mineral wealth that lay beneath the thin surface layer of our vegetation-covered earth, haunted my thoughts. I drew closer to peer into the mirror that human nature provides us to examine the scattered seeds of raw power and the subtleties of self-destruction.

Without a conscious or deliberate plan, I had been building a personal response to the disasters of war for my entire life. That day in Frankfurt, I suddenly felt that the time had come to give shape to my thoughts. Eventually, painfully, I composed a small chaotic dirge, as an offering for the dead—freely adapted from Charles Baudelaire's "de profundis clamavi":



The city is a blackened pit  
A sombre graveyard poured of lead  
For sixty years a red sun burned  
No leaves were born – the streams lay choked and dead  
What horror remains yet unforetold?  
Old chaos is refreshed – curses are renewed  
Greed is spread like honey on our tongues  
Fear – a blackened factory choked with dust  
Dangerous as a glacial sun  
Chaos once again becomes our hope  
And night our closest friend

Upon our return to Berkeley, I began at once to assemble photographic evidence and documentation to bring the project into focus.

"Never has any poet been able to describe Styx, Regnum Subterraneum and Plutoris, nor any theologus hell as gruesome as we can see it here. For outside a poisonous,

acrid and sulphurous smoke rises and poisons the air far and wide so that one cannot without pains go there. The smoke corrodes the earth, so that no plants can grow around."

— CARL LINNAEUS,  
describing copper mines in Falun, Sweden in 1734

## ON LEAD

Kiefer's use of lead as a medium for sculpture and Salgado's silver-gelatin prints were the triggering elements. Ten years earlier I had printed the *Defictions* of Diogenes using lead as the substrate for a work of critical philosophical imagination. Suddenly I was once again preparing an homage to our classical roots along with a cynic's urge to shock while educating the senses. Lead, an element toxic in its salts and acetates, accompanies the arsenic that often leaks from a copper mine and its smelt-

### INVERSION, 1

1890. All day long  
the smoke arises from the works  
stretches across the valley  
no higher than the town  
a still, calm sea, deep, murky.  
Carriages have to be driven slowly  
trolley cars have to creep  
workers lose their way  
many people bleed from their noses  
some vomit in the streets  
inversion layer  
invisible hand  
godlike transparent  
palm fingers thumb heavy with value  
holding the smoke down  
on the fayed valley

### ORESCAPE

In the copper area  
slopes gridironed by railway tracks  
steel boist frames mark  
the course of the greater veins  
monotonous slopes  
occasional shaft houses  
innumerable pits and trenches  
heaps of waste everywhere  
Only by digging through the cover  
of gravel-like debris  
can the limits of the intrusive masses  
be established

ing operations into local water sources. There, at the mouth of Hell Gate Canyon on the banks of the Clark's Fork of the Columbia River, I grew up fearing the poisonous waters that ran out of the sulfurous heaps of Butte and Anaconda, just a hundred miles upstream.

Lead is a dark material "a chthonian medium, 'of the earth,' a medium of grinding subterranean force, of the bowels and not the surface or face of things. Curses, insults, reproofs, spells, defixiones are drawn to lead, drawn on lead. There is an instinctive reach for lead when the work is crude, binding, and painful as the truth" (from "On lead as a text transmission object," *Diogenes, Defictions*. Peter Koch Printer, Berkeley, 1994). In spite of its lethal associations, lead is the matrix and ideal medium for my work as a printer. A malleable and essential element in the typefoundry, I feel comfortable in its presence.

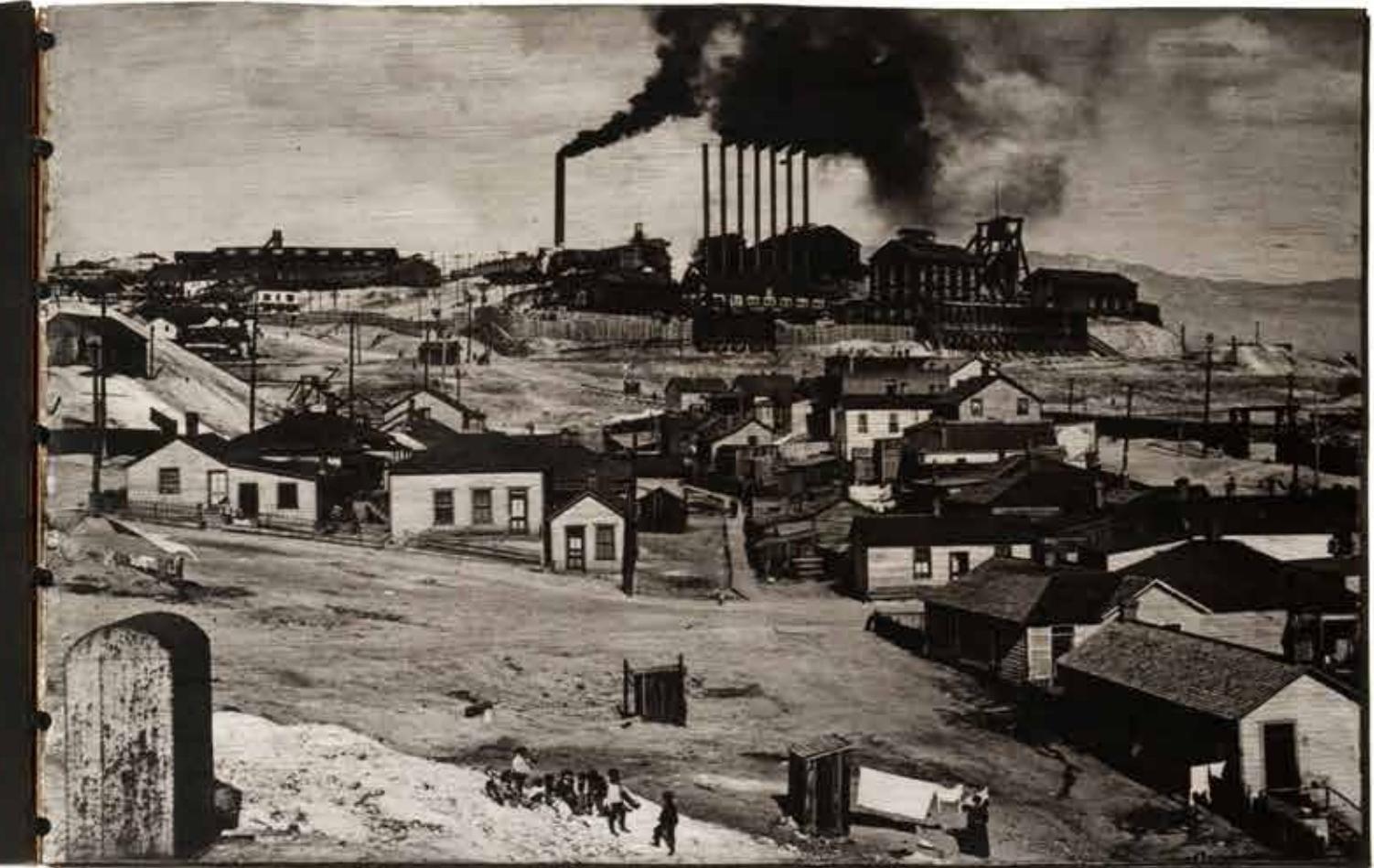
The work progressed slowly. I spent months compiling source photographs, then weeks traveling during the summer of 2014, digging through mining archives in Montana. There followed a period when I examined each promising photograph for alterations and cropping to produce the maximum impact. For much of that year my assistant Jonathan Gerken and I engaged in a protracted series of experiments aimed at preparing a suitable surface for printing photographic images on large sheets of lead. Once the lead leaves were printed to our satisfaction at Magnolia Editions in Oakland, we over-painted each image with acrylic medium impregnated with bone-black to dirty the brilliant whites and lighter grays. Our next challenge was to design a binding structure adequate to support the extreme weight of the leaves.

At first I was intent upon adding a text composed entirely of quotations from poetic and sci-

## MODERNITY

Like the hand guiding enlarging  
demand for copper wire  
1881: Edison installed his first electrical  
generating and distribution system  
27-ton "Jumbo" dynamos  
heavy copper bars and brass disks  
spinning around a magnetic core  
nearly 10 miles of thick copper wires  
threaded through underground conduits  
clean modern metal  
extruded into arteries  
of Power and Light  
1902: 11,930 miles of electrified streetcars  
with copper-coated electric motors

fed by copper wires  
1915: Bell Telephone had bought more  
than seven hundred million pounds of copper  
for its nationwide phone network  
vast horizontal ever spreading  
voltage tree whose roots are here  
copper bound with sulfur  
iron and arsenic  
the veins nearly vertical  
a depth of over one mile  
ascending to be purified  
in airborne drifts of filth



tific observation regarding mines and exploitation. However, before finalizing I wanted to confirm that all the structural concepts were workable. Lead's malleability couldn't be exploited as part of a book's binding structure. Repeated folding and unfolding subjected a lead sheet—already one of the weaker metals—to fatigue and tearing. Model after model was tested and rejected in our search for a design both rugged and flexible. Jonathan experimented with woven copper electrical grounding straps, small soldered ferrules linking one page to the next, interlocking copper brackets soldered to the edges of pages, etc; all were rejected. Eventually, and much to my relief, Jonathan arrived at a singular solution of copper refrigeration tubing soldered to the edge of each leaf and weaving a black linen belt to aid in binding the pages (both lead and Evelon) together to form a codex structure.

While we were confirming that the unusual parts and disparate materials could be unified and function successfully as a book, I began showing bits and pieces of the project to English-born poet Adam Cornford. After a few visits and serial viewings of the progressive stages of the design, he brought me a poem that revealed a sympathetic understanding of the symbolic nature of the whole project. I was so impressed that I asked him to write a series of pieces to accompany the images. He accepted the challenge. (Adam and I first collaborated in a pro-situationist action group in South Berkeley in 1973. Later, I printed his poems in *Montana Gothic*, a literary magazine that I published in the mid-1970s; and subsequently printed his first book of poems *Shooting Scripts* (1978) under my Black Stone Press imprint.)

We succeeded in producing our first successful prototype a few days before the opening of the 2015

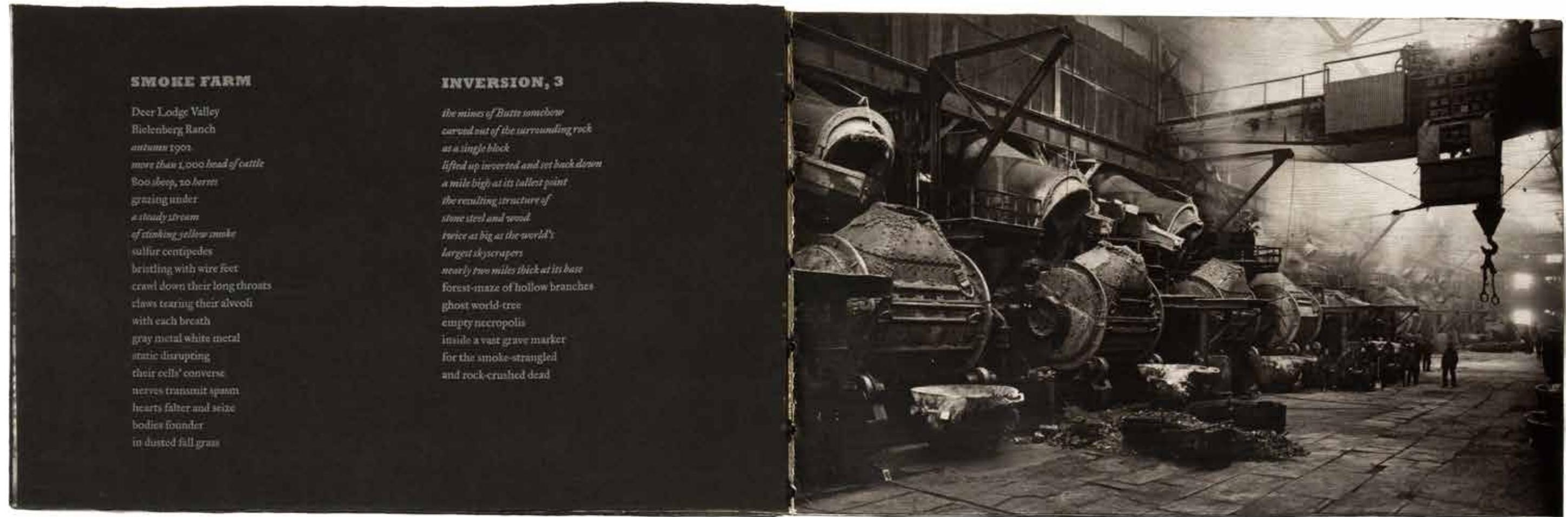
biennial CODEX International Book Fair where it debuted to lively interest.

Working backwards from the moment of publication—via the perspective of publishing as a social artform—I began to see the architecture of the book and the in-forming of content over months and years of experience and experiment, as the material result of both chance and prolonged concentration. Through diligence and paying strict attention to each nuance of the idea's development during the growth of the project, I understand how this making is my being, my way of staying alive under the stress of perpetually divisive and destructive forces. The great feeling of accomplishment that accompanies a successful collaboration between highly talented craftsmen and women is the true reward of my work—and, while I'm at it, I consider it my honor to frustrate the bastards who perpetuate the destruction of the planet in pursuit of irresponsible profit.

Is this work of unconcealing the apocalypse art work? I believe so. For me, work is life revealing itself in all its mystery and sublimity.

## COLOPHON

*Liber Ignis* consists of six .033" lead sheets printed at Magnolia Editions on a UV cured acrylic flatbed press interleaved with laminated felt and Evelon split microfiber sheets dyed black and printed from polymer plates on the Hacker Test Press at Peter Koch Printers. The binding is constructed with soldered copper tubing and linen thread. The text was composed in Fell Roman and Italic with Rockwell for titling. Box construction by John DeMerritt, Bookbinding, Copper and gold leaf cover plate executed by Christopher Stinehour. 12 x 18 inches, 22 pp., weight: thirty pounds.



## THE POETICS OF LIBER IGNIS

Adam Cornford

My involvement in the Liber Ignis project began when Peter Koch asked for my help in finding text that would work with the historical photographs of copper mining and smelting at Butte, Montana he had recently found as part of his ongoing project to document the conquest and environmental rape of the West in unique books and print works. I was haunted by the ghastly power of the images, all the more because, evidently taken simply as documentation, they did not seek to exaggerate or dramatize in any way what they recorded.

One of us, I don't remember which, suggested that I find some quotes from William Blake, since I know his work very well. I did find some verses from his unfinished and never-printed epic, *The Four Zoas*.

The relevant section was the one in which Blake's "Zoa" of the Fallen analytic intellect, Urizen, attempts to create a world in his own image and produces something like a cross between ancient Babylon and the hellish industrial Midlands of Blake's day—an aborted mechanical universe that soon collapses. But there was not enough material to serve as captions or companion text for more than a few of the photos. I suggested that I have a go at writing a poetic text of my own, which Peter encouraged.

Peter then handed off to me three books—or rather, two books and a pamphlet—that dealt with what happened in Butte. The pamphlet, *Butte & Anaconda Revisited: an Overview of Early-Day Mining and Smelting in Montana*, (Shovers, Fiege, Martin, and Quivik. Butte, 1991) was a guide from the mid-1980s to the history and remaining traces of the mining and smelting works formerly operated by Anaconda Copper. The two books were *Smoke Wars: Anaconda*

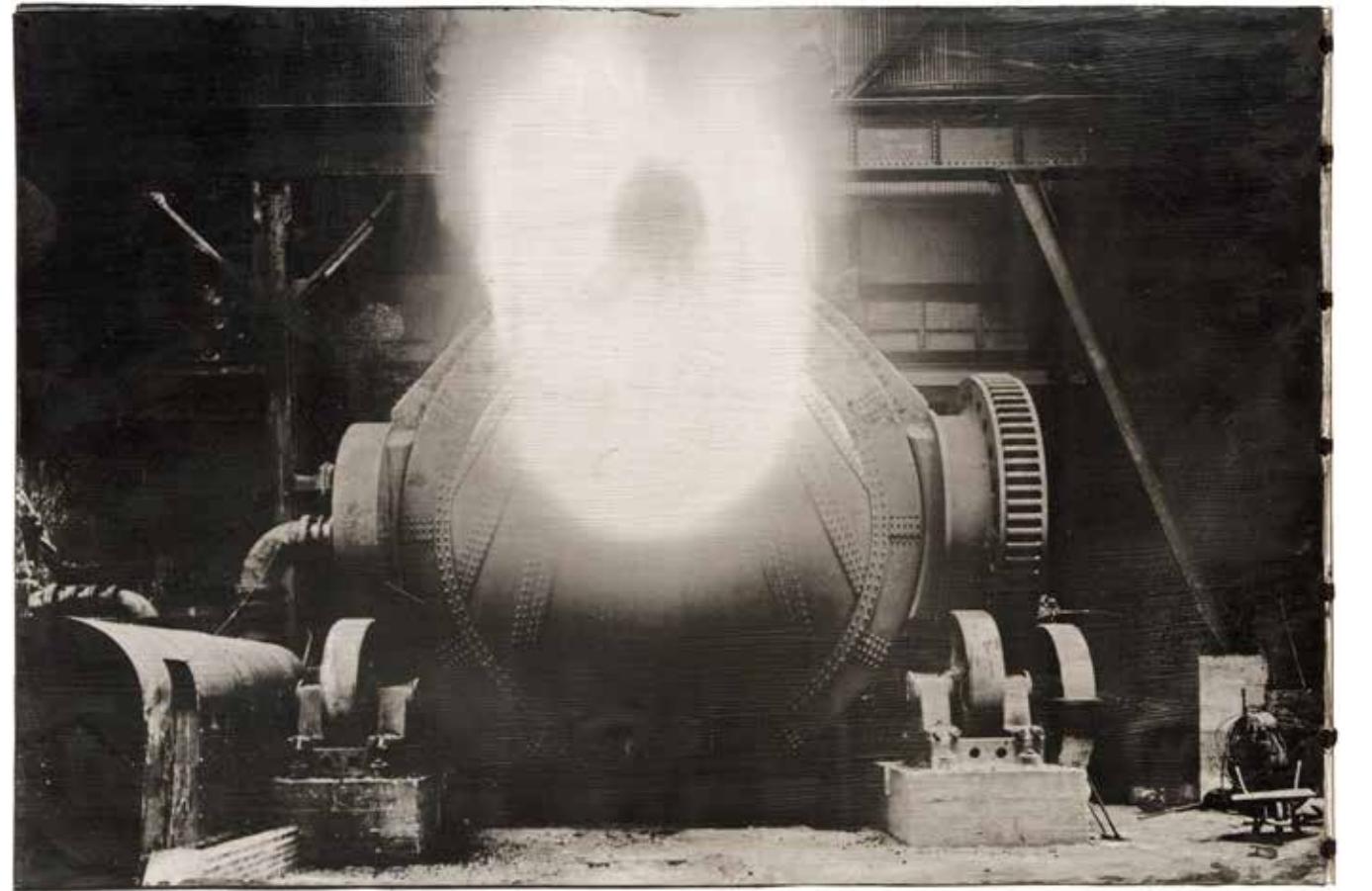
*Copper, Montana Air Pollution, and the Courts, 1890–1924*, (Donald MacMillan. Helena, 2000) which recounted the efforts of the citizens of Deer Lodge Valley and nearby areas during that period to curb the pollution that was killing them and their farm animals; and *Mass Destruction: The Men and Giant Mines That Wired America and Scarred the Planet*, (Timothy J. LeCain. Rutgers, 2009) a work of critical social history on copper mining in Montana and Colorado.

I opened *Butte & Anaconda Revisited* and was immediately struck by the descriptions both of the mining and smelting operations and of the way that the entire city of Butte would disappear for days beneath smoke so thick that it looked like a grayish lake. In *Smoke Wars* I found accounts of the toll taken by the pollution from open-air smelting—lead, arsenic, and sulfur—and in *Mass Destruction* more of the same, along with a detailed account of the technological innovations used to burrow more

and more deeply into the copper deposits and of the almost explosive growth of electrification and telegraph-telephone infrastructure that Butte's dearly bought copper made possible.

From that point on the poem began—to use a clichéd expression—to write itself. Passages I had marked, snipped out, and stripped down syntactically (printed in italics), gave rise to imagery of my own (printed in Roman), and material from all three books and various Internet sources was generally easy to integrate with the new writing. Although I have described the text as a collage, it is actually more of a montage, with elements partly blending into each other as in the photomontages of John Heartfield, Jess, or (latterly) Winston Smith.

The poem found its form in short lines, generally of two to three beats but quite often four, with the line breaks mostly at stress shifts or syntactic turns. The effect I realized belatedly I was aiming for was a



combination of driving rhythm and short breaths—almost panting—as if someone with trouble breathing was struggling fiercely to get across vital information, unable to pause more than briefly before starting to talk again. A rhythm of urgent gasps and blurts. The tone, by turns sardonic, furious, horrified, and resigned, emerged directly from the text, and the tempo shifted accordingly.

I cannot claim any significant originality in form. The poem's ancestry is easy to trace: the Neruda of *Canto General*; the documentary poetry of Hans Magnus Enzensberger (notably his serial poems "Mausoleum" and "The Sinking of the Titanic"); some work of Tom Clark and Ed Dorn from the 1980s; and looming behind them, Muriel Rukeyser's great and unjustly neglected *The Book of the Dead* from her 1938 collection U.S. 1, a poetic account of the worst industrial accident in American history, the Gauley Tunnel disaster of the early 1930s, which led to the deaths of between 700 and 800 mostly black work-

ers from silicosis. And behind all of them, William Blake's infernal visions from the prophetic books he collectively labeled *The Bible of Hell*.

To that very small group familiar with my earlier work—and with my enthusiastic acceptance of the label "neosurrealist"—this work may seem out of character. In some sense I suppose it is. But the marvelous (in the surrealist sense) and the nightmarish are close cousins. Moreover, much of my work over the last quarter-century has addressed science and technology. The beginning of this for me was exploring the phenomenological aspects of being a "cyborg"—starting from I.T. experiences like coding or exploring large networks and segueing into activities as ordinary as wearing sunglasses or driving a car. At around the same time I was working on a long narrative science-fiction poem, "The Snarling Gift," which addresses the environmental and social consequences of profit-driven technology (including chemical pollution and

global climate change) at a time now about twenty years in our future.

There is, besides, an eerily science-fictional quantity to the story of Butte. Some of it is the overlaid contradictions of its history and wider significance: the almost space-program-like efforts to drill deeper more safely (using technology adapted from deep-sea diving) and then to expel the pollution from taller and taller stacks with more and more elaborate filtration systems—while miners and smelter workers and locals and cattle went on getting sick and dying. Meanwhile, American capitalism was burning billions of tons of coal and oil to generate more and more electricity. So all this earlier work was preparation for writing *Liber Ignis*. I am honored to have been part of what is, in Blake's sense, a prophetic project.

## A FEW ILLUMINATING QUOTATIONS

"More than 65,000 acres at the southern end of Deer Lodge Valley have been affected by operations at the Anaconda Company Smelter. One hundred years of milling and smelting operations, including discharges into the air and stream, have scattered wastes that are high in arsenic and metals over a wide area. These contaminants pose potential risks to human health, to life in nearby streams, and to plants and animals in adjacent lands. In addition to the millions of cubic yards of tailings, furnace slag, flue dust, and square miles of soil contaminated by airborne wastes, millions of gallons of ground water have been polluted from wastes and soils."

"The plant stack was designed to eject lead, arsenic, and other metals in wastes from the processes. As a regular practice, tailings, smelter wastes, slag and flue dust were dumped into the Missouri River until 1915, when most wastes were to be deposited on-site. The state estimated 27.5 to 31 million tons of slag and tailings were dumped directly into the river. Contaminants associated with these sources included antimony, arsenic, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, silver and zinc."

— website extract. Superfund Records Center, United States Environmental Protection Agency. 2012.

"Over the course of nearly a century, miners excavated an extraordinary ten thousand miles of mine tunnels and shafts, leaving behind something more like termite-infested wood than terra firma.. Sometimes the filigree of rock gives way and the ground collapses. The residents of Butte have long told stories of animals and buildings swallowed up by subsiding earth, disappearing into the ground as if pulled down by the

very demons of hell."

— Timothy J. LeCain. *Mass Destruction: The Men and Giant Mines That Wired America and Scarred the Planet*. Rutgers, 2009.

"The hellish sulphur smoke from the Butte Reduction Works and other offending smelters has been smothering the city for several days again and yesterday afternoon and last night it was as strong and as yellow and thick as at any time this winter. The official organ of the reduction works, however, says the smoke is all right; that healthy people get fat on it, and that it kills only persons with weak lungs and delicate throats."

— The Anaconda Standard. February 12, 1899, page 11.

## IMAGE SOURCES (IN ORDER)

Converters #1 Great Falls type showing tuyers, [1913 December 8] Photographer Unidentified. Photograph from the Anaconda Copper Mining Company. Courtesy of Montana Historical Society Research Center Photograph Archives, Helena, Montana. PAC 82-62 2238

"birds eye view of the great mining camp / Butte City Mon't." [no date] Photographer Unidentified.

Photo courtesy of The World Museum of Mining, Butte, Montana. 03181

B & M Copper Smelter at Great Falls, Montana [1910] G.V. Barker, photographer. Montana Historical Society Research Center Photograph Archives, Helena, Montana. 949-542

Converter, Anaconda smelter [1906 November 22] Photographer Unidentified.

Photograph from the Anaconda Copper Mining Company. Montana Historical Society Research Center Photograph Archives, Helena, Montana. PAC 82-62 1554

Converter, Great Falls type, first charge, 1913 December 13. Photographer Unidentified. Photograph from the Anaconda Copper Mining Company. Montana Historical Society Research Center Photograph Archives, Helena, Montana. PAC 82-62.2243



Thomas Ingmire, Truth



Betsy Stirratt, Chronicle, 2017, archival pigment print



Betsy Stirratt, Evidence, 2017, archival pigment print

## EXTRACT

Jesse Nathan

i.

Drove out of Reno on 580  
headed south, hooking past the huddle of casinos  
in the white dusty morning light  
along the haze of the airport, jets parallel and gliding  
much faster than we in our corridor  
of highway, concrete walls  
decorated by images meant to accentuate  
“place”—mountains in relief, bighorn sheep,  
salmon swimming in the direction we’re driving  
as if to say all journeys are upriver—  
and beyond these tan and turquoise friezes  
desert country streams by,  
blisters of malls the color of dust, the square squashed architecture  
sprawling into parking, neon signs, billboards  
that seem to shout things like DREAM  
WITH YOUR EYES OPEN (hot air balloons) or to HAVE  
AND TO HOLD (a diamond ring). R E N O W N  
rides a hospital’s upper edge, and on the face of  
distant Mount Rose, ski runs in summertime claw downward  
as if torn by acid or landslides,  
as if the mountaintop had cried, leaving tear-trails  
in the ponderosas, tracks in no snow,  
an alphabet of runes for giants.

ii.

Divorce, somewhat famously, was legal here  
earlier than most places, but this was only one of the freedoms  
persuading settlers, gamblers, artists  
to Reno, rising in its nest of mountains, a town that reclines  
4 or 5,000 feet above sea level in back of the Sierra. Toward the southern end  
we lean onto 395, then through a roundabout  
slinging us onto 341, the elevation lifting quickly. Geiger Lookout. Smokey  
says danger ORANGE. Lodgepoles, Jeffreys,  
Ponderosas pinned to the lapel  
of steep sides, these shoulders of I think cinder,

limestone, granite, jasper’s red and blackened shades dancing—  
I don’t have the proper vocabulary, really,  
to say what these cliffs are made of—  
junipers and gnarled pines whose habits I don’t recognize  
spurt up less and less, an absence that reveals roads  
veering off our two-lane with names  
like Calaveras and Chaparral. Inside the rock  
things have been compressed into existence,  
lead, copper, barium, silver, gold,  
and horses graze on the surface, flick their tails, never look up.  
Motorcars to them must be part of the weather,  
steady as the sage brush in its pale bluish green.  
The road snakes around us as we sway in our seats  
absorbed in talklessness—passengers, witnesses.  
SEE THE FAMOUS SUICIDE TABLE  
reads a sign, and another, a few miles later, promises the past:  
THE WAY IT WAS. The land wears tans  
and tweeds, and reds. Occasional mansions  
rip up out of the mountainsides,  
and one even balances on the tip-top  
of a small peak, a whole side a glass face  
pointed west toward the faraway resort.

iii.

And then we’re here. Virginia City. As if to bind that  
far-removed coast to this craggy tract. And under the name  
run the town’s watchwords: “Our first tweet  
was by Pony Express.” There’s St. Mary’s in the Mountains, built and burned  
and built again, all in a span of ten years  
long ago. A hawk regards us from its cross, then vanishes.  
C Street is Victorian facade, carnival colors, signage, old-timey  
photo ops, cowboy hats, not bars  
but saloons, an alley for staging gunfights,  
a post office (real), a ward school (fake), various shops  
for boots (of shark, elephant, kangaroo, ostrich,  
teju, rattlesnake, bison, calf) and spurs,  
and rock candy, and antiques and folk art—the sidewalks  
formed by, it seems, wood palettes. Cheap magnets, flags,  
funky t-shirts, outrageous bumper stickers, replicas  
of mining tools, a rust-covered shiv, hats of all sorts ...  
The enormous open doorway

is the entrance to The Ponderosa,  
established in what were once offices of a bank,  
a photo from 1892 of the local champion baseball team,  
The Stars, and photos of the bank tellers, unsmiling  
men in suits with timepieces draped from vests  
standing in front of the vault—  
but only the vault is still here, open for inspection.  
It once gave up \$32,000 in broad daylight  
and the loot was never found,  
reputedly hidden somewhere in Six Mile Canyon,  
simmering—I imagine—with some unpanned volume  
of earth in that expanse named for a fast-talking prospector  
called Comstock, a man painted  
on the Ponderosa's high walls  
just returning from a walk with Twain  
(Samuel became Mark here writing for the *Territorial Enterprise*)  
along with a painting of a lovely woman,  
she looks bronze, long-haired, eyes wide open  
naked (of course) on her back, Madam Julia Bullette  
who threw fancy dinners for the gentlemen  
and was murdered for her jewels by John Milleain  
in 1861, "hung 1868," says the painting—  
no pun meant, I don't think—  
and Milleain, haggard claw stirring in the roil of pigment  
fresh from the deed and clutching a handful  
of gelt, fades into his frown  
while across from the murder a portrait of Sam Brown  
renders the moment he stabbed a man while the bar folk  
looked on like it was entertainment—I first typed entertainment—  
and it hangs there conjured in beautiful dole colors  
like a Thomas Hart Benton craze  
above the rows of beautiful booze bottles,  
there's a glass case, too, of what's come out of Mount Davidson—  
what this tourism is terraced into—  
tiger's eye, cinnabar, scheelite, greenish sulfur, nickel a goldish silver,  
pyrite a silverish gold, wonder stone swirling, pure  
oro-bit obtained when its "matrix was removed  
with hydro-fluoric acid," a bit of dark light extracted  
from Midas Mine in 1932  
looking now like a dried-out sponge,  
desiccated paint rags, sweet mountain fart.

iv.

I hear Adolf Sutro jacked riches from these rocky slopes,  
burnt, nubbed, wrenched, cracked,  
all profits carted off to San Francisco  
where he was building a gate and a cliff house  
and a garden guarded by stone lions,  
commissioning statues of Diana hunting and a stag hiding,  
refurbishing a "cottage" in the fog on the bluff  
near the farthest point of land  
from which he could mayor the city  
dreaming a eucalyptus forest  
to cover the scrubby dunes and little sand flowers  
wherever there weren't to be houses, streets, a park, shops.  
Here, a glass case full of guns  
lines one wall of the Ponderosa  
and there's something in there called a Sweetwater,  
two barrels and a fat stock: a Winchester  
that puts me in mind of the mansion just south of the Bay  
that the company heir built as she fled and chased the ghosts  
of, she believed, everyone ever shot by one of her family's works,  
she built room after room  
for the dead, and brick walls  
behind doors, tunnels colliding and missing and going nowhere  
like the crisscross of hollow miles  
running under this town. I can't help but wonder  
what this particular Sweetwater did before retirement.

v.

Then the official tour takes us  
under the Ponderosa  
and we hear that the average lifespan of a miner was 42 years,  
that the temperature in the tunnel was always 50 degrees,  
that the men making \$4 a day (above average) in the late nineteenth century  
to run drills that could blow up if slightly mishandled, pneumatic teeth  
known as widowmakers, a tool that had replaced  
slamming a forty-pound drill bit featuring, at one end, a four-pointed star  
pattern of ridges—one man would twist it  
a quarter turn between sledges, the other slamming it into the rock  
and they would switch after thirty minutes  
checking regularly for hot surface development

which would mean a steam pocket,  
an underground hellstream boiling at 170 degrees  
and capable of separating a man  
from his skin in seconds—  
so says the guide whose dentures bulge out  
when he looks around, looks at bit like Kurt Vonnegut  
when he names the bonnet of steel,  
a thing that hung over the hoist  
that hauled men up and down at high speeds,  
the bonnet protecting against most falling rubble  
but not all. One bell toll meant hoist, two meant lower,  
three meant man on, run slow, nine meant  
DANGER! DANGER!  
Struts made of ponderosa pine reinforce  
our tour route's tunnel  
past a "dynamite room" smelling gently, says my girlfriend  
like grandma's cellar, the best smell there is,  
comfort of changelessness  
of what ages to get more cantankerous—  
no need for cap or fuse by the time they found  
the abandoned sticks, all you had to do,  
says the guide, was drop the pieces and everything would blow,  
winze, drill, struts, vault, bar  
out into the unmonetized sunlight—  
but it has, of course, been safely removed  
save the scent of cellar.  
Beside the little compartment there's a flume,  
a piece of what diverted water from the high Sierras  
down across the Washoe Valley up to the reservoir  
five miles outside town, a flume whose  
boards got polished by all that fluming,  
polished into outrageous cryptic shades  
of red and brown, boards now lining the walls of the Ponderosa.  
At the back of the dark cool narrowing way,  
the guide shows us a stuffed canary in a cage  
signifying the many who need oxygen,  
and if it stops singing  
it is because the earth has rejected  
our digging, it is time to go  
says the winged prisoner  
with silence.

vi.

Later, after a beer named for a sea-dwelling dinosaur,  
we stop back in the Ponderosa to pee  
and I get to talking with our guide from the tour  
on the question of what rock it is that's so red on the way in  
and he says hard to say, you should go ask Mister G.,  
he owned this mine and he's on A Street.  
Well, he had dug the mine,  
it turned out, which is a big difference, and he lived on B Street,  
and he came out when we walked into his quiet crumbling courtyard  
populated with mining refuse, his face pickled red,  
his watery eyes wavering in a crimson juice,  
his puffy cheeks clean-shaven, giving way to a little drip  
down the corner of his mouth, and the perfume  
of chew wafts mintily around his head.  
Jasper, yes, and obsidian, silicate rose, quartz  
is what the mountains on your way  
mostly were, he says. And then he says he has a hummingbird  
who's nested—right here, see?—on the rack of a buck  
hung from the awning, the bird's two babies  
each the size of a human nostril  
hold perfectly still in the hopes we'll think them  
ornaments or, better, won't think of them at all.  
The mother peeps and flaps at us  
until she gets tired and rests on a near-petrified saddle.  
Then she's bobbing  
somewhere behind me again and squeaking  
at our presence, trying to get us to look at her  
and not her babies in the nest a couple of feet away.  
Will the town make it? I ask Mister G.  
He laughs. It's a gentle sniffle.  
Of course, he answers. They sell all that junk  
down on C street to tourists.  
He shows us what he's dug up. Bottles, picks,  
knives—some for shaving, some pocketsize—  
containers of all sorts, wheels, crucibles  
to melt the money.



"NATURE WORKS BY BUILDING THE BLOCKS THAT BUILD LIFE. AND OUR SPECIES, AS WITH ALL OTHERS, IS BUILT FROM EXTRACTION AT EVERY LEVEL."

—WILLIAM L. FOX

## CAN'T FIND MY WAY HOME

Janet Biggs

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Janet Biggs, a 2018 John Simon Guggenheim Foundation fellow, is known primarily for her work in video, photography and performance. She lives and works in Brooklyn, New York. Biggs' work focuses on individuals in extreme landscapes or situations and often navigates territory between art and science. She has captured such events as kayaks performing a synchronized ballet in Arctic waters and sulfur miners inside an active volcano. Recent projects have explored the creation and loss of memory from personal, physical, and scientific perspectives. Biggs' work has taken her into areas of conflict in the Horn of Africa and to Mars (as a member of crew 181 at the Mars Desert Research Station). She has collaborated with neuroscientists, Arctic explorers, aerospace engineers, astrophysicists, Yemeni refugees, and a robot.

In *A Step On the Sun*, the artist focuses on hardships overcome by a sulfur miner in the Ijen volcano, in the East Java province of Indonesia. Biggs's video centers around a crater situated almost two miles above sea level, which houses the world's largest sulfuric lake. We watch as the miner collects hardened sulfur crystals and packs them into a basket. Amid clouds of toxic sulfur dioxide gas, he carries heavy loads up a steep, rocky path from the crater floor to the rim, then to a distant weigh-station. The footage confronts us with a provocative mixture of natural beauty and human exploitation.

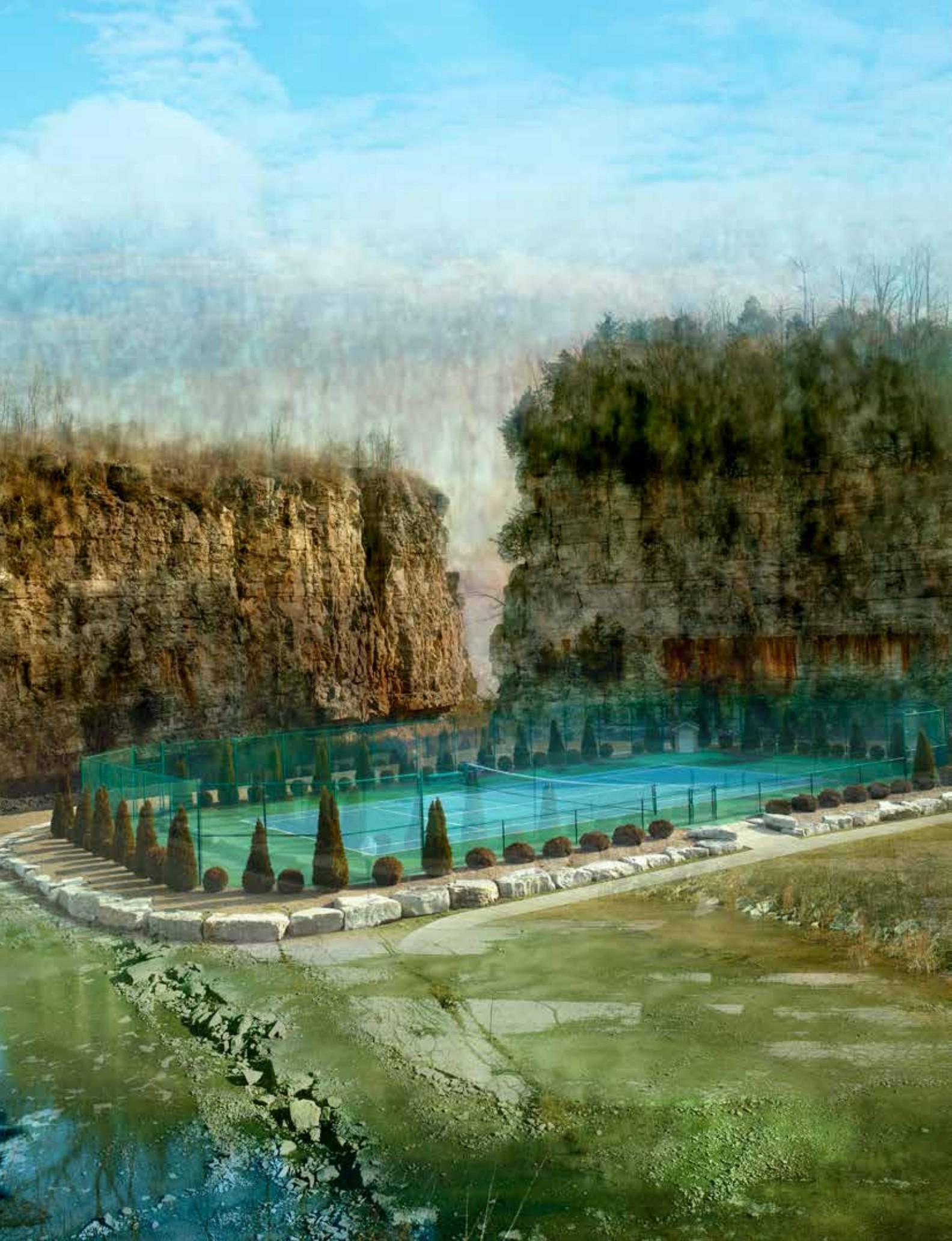
*Can't Find my Way Home* juxtaposes footage shot in the crystal caverns below the German Merkers salt mine with documentation of neurological research conducted in laboratories in New York and Houston. In doing so, Biggs draws visual connections between the structure of these crystals and the proteins that determine the biochemical conditions of a hyper-excited brain, such as one afflicted with Alzheimer's. By physically exploring the Merkers crystal cavern, Biggs figuratively sets out to investigate the diseased brain of her grandfather, tracing fading memories and making astonishing discoveries as she herself experiences disorientation and confusion, some of the same symptoms endured by Alzheimer's patients.



Above: Janet Biggs, *Can't Find My Way Home* (installation view at Blaffer Art Museum), 2015, four-channel HD video installation with sound. Running time: 08:19. Courtesy of the artist, Cristin Tierney Gallery, New York, NY, Galerie Analix Forever, Geneva, Switzerland and CONNERSMITH, Washington D.C.

Previous page: Janet Biggs, *A Step On the Sun*, 2012

Single channel HD video with sound. Running time: 12:28. Courtesy of the artist, Cristin Tierney Gallery, New York, NY, Galerie Analix Forever, Geneva, Switzerland and CONNERSMITH, Washington D. C.



Above: Elena Dorfman, *Empire Falling 21*, 2012, chromogenic print on metallic paper, 96 by 43.5 inches; Left: Elena Dorfman, *Empire Falling 6*, 2012, chromogenic print on metallic paper, 50 by 37 inches

## EMPIRE FALLING

Elena Dorfman

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Elena Dorfman's photographs and video installations have been exhibited in both the U.S. and worldwide at venues including the Fondazione Prada, the Triennale di Milano, and the San Francisco Museum of Modern Art.

*Empire Falling* is artist Elena Dorfman's 2013 series of photographs, conceptual landscape images exploring the abandoned and active rock quarries of the Midwest, in Kentucky, Ohio, and Indiana. Using images made over the course of several years and numerous locations, the work presents a contemporary view of an ancient—though evolving—landscape.

"These seemingly ordinary sites, whose aggregate is mined until the earth has nothing left to give, have been a constant source of wonder to me," Dorfman writes. "What began as a sociological exploration of the communities that gather at quarries to jump from rocky precipices into water, evolved into a study of these massive pits, often overlooked and unseen. Using an archeological approach, I manipulate and reconstruct the landscape, reassembling and layering the pictures just as the oldest rock begins at the bottom and works its way up to the surface."

As globalization and consolidation continue unchecked, these astonishing landscapes are transfigured—with landfills, golf courses, and exclusive housing communities—wherein the quarry water element has, ironically, been incorporated into the development as a scenic or recreational point of focus. The images from *Empire Falling* present the quotidian rock landscape in an unexpected way, such that the viewers' perception is challenged not only by the imagery itself, but also by their own personal subjective relationships to industry and the evolving earth.

## THE LANTHANIDE SERIES

Erin Marie Espelie

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Rare earth elements are not rare; rather, they are difficult and expensive to separate from minerals, such as bastnäsite, and surrounding rock. Moreover, their atomic orbits tend to get tangled together. Therefore, very few places on the planet have mined them successfully and it wasn't until the 1960s that any significant quantities were mined. The rapid rise of color televisions called for brighter hues in cathode ray tubes, and the vibrant and seductive red emitted by europium (Eu, atomic number 63) set mining companies into motion. To satisfy demand, the Mountain Pass Mine in California's Mojave Desert—roughly equidistant between Los Angeles and Las Vegas—churned out europium and then other rare earth elements. Until the 1980s, the U.S. dominated the production of rare earths, then China entered the market, with mining in Tianjin, near the Mongolian border, and both Jiangxi province and Guangdong provinces. By the late 1990s China had overtaken the Mountain Pass mine in production, with lower prices and higher yields, though not without environmental cost in Ganzhou and Baotu, where groundwater contamination along the Yellow River led to mass die-offs in livestock, soaring cancer rates in people, and the evacuations of entire villages.

The Mountain Pass Mine suffered its own environmental disaster in 1996 when a routine pipe cleaning went awry and about 300,000 gallons of radioactive waste spilled into the Ivanpah Valley. That event, compounded with other factors, sank the profit margin of the mine, causing it to close in 2002. China subsequently gained a 97 percent monopoly on production and started withholding stock, imposing taxes, and annual limits on exports, thus driving up prices. In its search for alternative rare earth sources, the U.S. turned to Afghanistan. Under military protection in 2009, scientists with the U.S. Geological Survey scoured southern Afghanistan and pinpointed an extinct volcano, Khanneshin in Helmand Province, that contains an estimated 1.3 million metric tons of desirable rock upon which the Pentagon has placed a value of \$7.4 billion, with another \$82 billion more potentially to be mined. (According to The New York Times, in 2010, "American officials estimated that Afghanistan had untapped mineral deposits worth nearly \$1 trillion...")

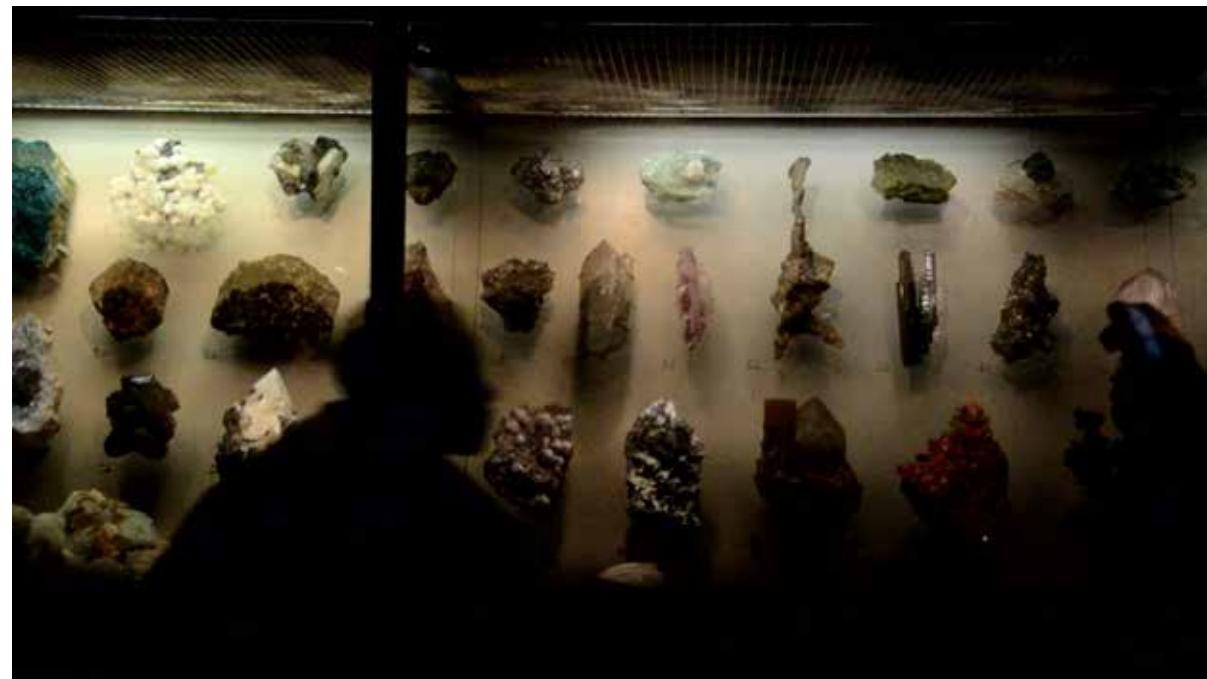
Horrifically, or thankfully, military action has been slow. Perhaps for that reason, the Mountain Pass Mine in California reopened in 2012, a time when dysprosium (Dy, atomic number 66), which is also mined there, was selling for more than \$1,000 per pound. That was when I visited the mine, in shooting for my 2014 film *The Lanthanide Series* (2014, 70 minutes). The mine was shuttered again in 2016, but has recently been purchased by MP Materials, which plans to resume mining sometime in 2020.



Erin Marie Espelie, *Automorphic 2*, from *The Lanthanide Series*, 2014, HD video still



Erin Marie Espelie, *Automorphic*, from *The Lanthanide Series*, 2014, HD video still



Erin Marie Espelie, Mountain Pass Mine 9, from *The Lanthanide Series*, 2014, HD video still



Erin Marie Espelie, Mountain Pass Mine 12, from *The Lanthanide Series*, 2014, HD video still

## THE LANTHANIDE SERIES

(From the Periodic Table)

### LANTHANUM: La, 57

Used in camera lenses and digital projectors; translated from Latin as “to escape notice”

### CERIUM: Ce, 58

Used to polish optical glass and make lighter flints

### PRAESEODYMIUM: Pr, 59

Used in jet engines and to block UV rays

### NEODYMIUM: Nd, 60

Essential magnetic force in headphones, microphones and speakers

### PROMETHIUM: Pm, 61

Converts light into electricity; named after Prometheus, who stole fire from the Sun and gave it to humans

### SAMARIUM: Sm, 62

Used in spacecraft motors and electric guitars

### EUROPIUM: Eu, 63

Emits red light integral to televisions and digital projectors

### GADOLINIUM: Gd, 64

Used in night vision goggles

### TERBIUM: Tb, 65

Emits a yellow and green light in fluorescent lights, LCD screens, and banknotes

### DYSPROSIIUM: Dy, 66

From the Greek, dysprositos, “hard to obtain”

### HOLMIUM: Ho, 67

Used in brain scans and other medical imaging

### ERBIUM: Er, 68

Used to amplify fiber-optic communication

### THULIUM: Tm, 69

Named for Thule, translated from Latin as “the northern most land”

### YTTERBIUM: Yb, 70

Used to gauge earthquakes, strengthen steel, and to locate cancer

## DESERT GOLD, PART II

### THE MOJAVE PROJECT

Kim Stringfellow

The General Mining Act of 1872 encourages exploration, claiming, and mining of valuable mineral deposits by U.S. citizens of “ordinary prudence” within public lands that are unclaimed and open for mineral entry [1]. The Diggings™ website states that 3,856,269 mining claims have been recorded within the U.S., of which about 10 percent are currently active. The U.S. Geological Survey (USGS) lists 139,591 records of mines in North America with California leading the nation with its inventory of 25,673—more than double that of the runner up, Nevada [2]. However, the majority of these mines located throughout the U.S. were closed or abandoned long ago.

Numbers aside, the statute is considered by its detractors as archaic, in that it imposed little, if any, regulation in an effort to encourage the development and exploitation of the nation’s mineral resources. Opponents argue that the law provides a “free ride” for mining interests as no royalty has ever been levied on profits earned on metallic minerals over the nearly 150 years the act has been in place. It is estimated that \$400 billion worth of gold and other lucrative minerals have been extracted in public lands without the American public receiving a dollar in return even though \$1 billion of metal continues to be mined annually [3].

In addition, the per-acre patent fees allowing for the outright purchase of mineral bearing of public lands—originally set at \$2.50 for placer claims and \$5 for lode claims while patenting was active—had not been raised since President Ulysses S. Grant first enacted the law. Although Congress imposed a moratorium on mineral patent applications on October 1, 1994 and no new patents have been issued since, mining watch dog groups argue that more than three million acres of public land have been

“given away” for a pittance to foreign and domestic mining entities since 1867 [4]. For instance, Canadian-owned Barrick Gold Corporation, who owns 75 percent of gold mining interests in Nevada, secured patents for over 1,800 acres of public land in 1994 just before mineral patenting had ended for around the price of \$9,000—at the time estimated to yield over \$10 billion worth of gold. In 2018 alone, Barrick’s worldwide operations generated \$7.24 billion and provided their shareholders with a 33 percent increase in annual dividends [5].

More perplexing is the fact that lawmakers have mostly failed to amend or modernize the 1872 law on these and other key issues. For instance, multi-national mining corporations (many Canadian and foreign owned) operate within U.S. public lands without paying a cent on gold, silver, copper and the other valuable metallic minerals from which they profit most handsomely [6]. In contrast, the federal government collects annual royalties from 8 to 17 percent from corporations extracting coal, oil, and gas within U.S. public land and waters—representing billions of dollars in royalties. The Pew Charitable Trusts’ Campaign for Responsible Mining estimates the federal government, along with taxpayers loses, at minimum, \$160 million annually by failing not to impose similar levies on the hardrock metallic mining industry [7].

Some bold U.S. lawmakers have sought to reform the industry’s egregious tax breaks and hefty federal subsidies, dubbed “reverse royalties,” beginning as early as the mid-1860s—but with little success. The late Arkansas Senator Dale Bumpers had an ongoing annual debate on this divisive issue with Nevada Senator Harry Reid over an eight-year period beginning in the early 1990s. It should be noted that both Senators are Democrats. Reid, born and raised in Searchlight, Nevada, a dusty gold town sixty miles south of Las Vegas, explains his hardline and unrelenting support of the mining industry [8]. Reid’s opponent, Bumpers, considered the 1872 law to be “a license to steal and

a colossal scam.” Bumpers fought hard during his Senate tenure to see the act reformed—but to no avail—having stated that members of Congress “who perpetuated this unbelievable scam are never held accountable, because the public knows little, if anything, about the abuse [9].”

Although several bills have been introduced in recent years seeking to impose royalties on corporate mining profits—including one unsuccessful bid in 1993 by former Secretary of the Interior Bruce Babbitt—mining special interest groups such as the National Mining Association have also lobbied hard and very successfully to keep bills from passing, arguing that they pay their share of taxes and provide rural jobs. Babbitt’s push fell flat after Reid publicly opposed his bill along with another one that would have eliminated a tax break for corporate mining companies—saving them around \$327 million a year in taxes [10]. As long as Reid remained in office he would continue to thwart any similar bill that came his way.

A later effort to reign in industrial mining activities occurred in 2007 when the House of Representatives passed The Hardrock Mining and Reclamation Act that would, if enacted, levy a 4 percent royalty on existing mining at unpatented claims and 8 percent on any new mining operation. Private or previously patented claims were to be exempt. 70 percent of the royalty fees were to be set aside to remediate abandoned mining claims with the remaining 30 percent given out as aid to communities negatively affected by such activities. Even the Bush administration toyed with the idea implementing royalties on metal mining production [11]. In contrast, during his 2007 presidential election campaign, then Senator Barack Obama balked at imposing royalties on mining interests, commenting, “legislation that’s been proposed places a significant burden on the mining industry and could have a significant impact on jobs [12].” Nevada, as it turned out, was a crucial swing state. The U.S.

Senate eventually killed the bill in 2009. Another version of this bill similarly died in 2011.

Senator Tom Udall (D-NM) and Chairman of the House Natural Resources Committee Raúl Grijalva (D-AZ) have co-sponsored a reform bill in 2019 that would require a 12.5 percent royalty on any new hardrock mining operation and an 8 percent royalty on existing ones—making more than \$50,000 in annual income. With this bill, 25 percent of the collected revenues would go to the state where the mine is located and the rest will supplement a federal reclamation fund [13].

Notably, eighteenth and early nineteenth century mining operations were minuscule in scale compared to today’s open pit cyanide heap leach operations. Consider the massive scale of the largest gold mine in North America—the Goldstrike Mine owned by Barrick Gold Corporation—geographically positioned along the microscopically gold-rich Carlin Trend of northeastern Nevada. The company’s website states that the “ultimate pit will measure approximately two miles east to west, 1.5 miles north to south, and have an average depth of approximately 1,300 ft [14].”

Regardless of their physical footprints, many smaller historical mines have resulted in lingering environmental damage, dangerous physical safety hazards and, at times, staggering ecological devastation. Thousands of historic, abandoned small-scale mining operations remain physically accessible and many require extensive environmental site remediation. With owners long gone or bankrupt, the federal government and consequently, the taxpayer, are left to foot the bill.

The Bureau of Land Management (BLM) manages these abandoned extractive follies on public lands throughout the West. Although the actual number of historic mining sites in the California Desert District is unknown, a 2014 USGS study estimates that there are 22,730 abandoned mine sites with 79,757 individual features located across thirty-five million acres of arid lands of central and southern Califor-



The historic Yellow Aster gold mine above Randsburg, CA was transformed into an open-pit cyanide heap leach operation during the 1990s.

nia. The BLM's Abandoned Mine Lands (AML) program whose mission is to "mitigate and remediate hard rock AML sites on or affecting public lands" suggests that within the Mojave Desert region there are 17,060 AML sites alone that require further study and possible remediation [15].

It should come as no surprise that the 1872 act did not include a requirement for post-operational mining reclamation—the idea was simply unheard of at the time. It would take one hundred years—with the passing of the Federal Land Policy and Management Act (FLPMA) in 1976—for specific reclamation requirements to be implemented once mining operations ceased. The Surface Mining Control and Reclamation Act (SMCRA) of 1977 was then federally enacted by the Carter administration to counter the environmental effects of coal strip mining. SMCRA additionally administers abandoned mines on

federal lands and requires all active mining operations to post a bond to ensure that adequate funds are set aside for reclamation purposes. Two years before SMCRA, the California state legislature enacted The Surface Mining and Reclamation Act (SMARA) of 1975, "to address the need for a continuing supply of mineral resources, and to prevent or minimize the negative impacts of surface mining to public health, property and the environment."

In 2003, the California State Mining and Geology Board adopted regulations requiring the backfilling of open pit metallic mines within the state "to a condition that approximates the natural condition of the surrounding land and topography [16]." Although most large open pit metallic mines are not required to fully backfill the excavated pit upon closure they must recontour the pit's slopes to lessen the steepness of the grade. Spent heap leach pads,

overburden and waste piles, sometimes miles in length, must be graded and revegetated. All mine buildings, mills and other structures must be dismantled and torn down.

The EPA lists industrial metallic mining as the largest toxic polluter in the nation. Consequently, many former mining sites require costly, and mostly continuous, environmental, health and/or safety remediation. Closure or reclamation bonds have been mandatory for mineral mining operations in the U.S. since 1977 in an effort to guarantee that former mining sites will be properly remediated and reclaimed once operations cease. It is important to note that a number of mining companies have been shown to be inadequately financed due to the fact that they are "self-bonded." Once bankrupt, these same mining operations abandon the site leaving future cleanup costs in the hands of the taxpayer—illustrating how current financial assurance of reclamation bonds fails to cover the true, long-term cost of reclamation.

Responding to the failed self-bonding practice, the Obama administration later mandated that the Environmental Protection Agency (EPA) force hardrock mining operations to secure separate sources for mine clean up funding. The Trump administration, who is unraveling years of hard-won environmental regulation at many federal agencies, reversed this decision in late 2017. The reversal is being contested in court as it violates the 1980 law that spawned the Superfund program. Further, the Trump administration has very enthusiastically reopened 1.3 million acres (more than 2,000 square miles) of mining claims within the California deserts during 2018 that had been previously made off limits for extractive industry use by the Obama administration.

All in all, open pit, industrial-scale metallic extraction processes—especially those involving the cyanide heap leach method—are extremely problematic on a multitude of levels so a detailed overview of its history and process is warranted.

Cyanidation is a hydrometallurgical leaching method where aqueous cyanide is used to dissolve and extract microscopic gold and other precious metals from lower grade ores. As early as 1783, chemists knew that aqueous cyanide solution could dissolve gold, however, it took nearly one hundred years for the technique to be refined and utilized at large-scale gold extraction operations [17]. In 1887, Scottish mining chemists developed the MacArthur-Forrest cyanide process, which was first implemented successfully at South Africa's Witwatersrand mining district in 1890. The Mercur Mine in Utah was the first American outfit to make use of the process during the following year. By suspending crushed ore in aqueous cyanide solution, up to 96 percent pure gold could be recovered. Cyanidation would revolutionize and replace the mercury amalgamation process at larger mining operations by the 1920s. Today, the process is used in 90 percent of all gold production worldwide.

Although cyanide is highly toxic and capable of causing immediate death in a variety of forms, it is relatively cheap and readily available for industrial purposes. Cyanide, for the most part, is biodegradable; exposing cyanide to sunlight, oxidizing it with bleach or hydrogen peroxide and allowing microbial processes to convert it into ammonia are ways cyanide is neutralized or broken down. [18] Although cyanide is manufactured primarily for industrial mining purposes, it also occurs naturally. A variety of plants and organisms, including some insects, along with certain bacteria, fungi and a surprising number of common vegetables, such as cassava root, along with seeds and pits from a variety of stone fruits, contain a form of the chemical.

The mining industry was once again transformed through an updated variation of the cyanidation process during the 1970s with wide-spread implementation of industrial-scale, open pit cyanide "heap leaching"—which allows lower-grade



Retired miner Tom O'Donnell, a.k.a. "Ordinary Tom" in front of his historic home in Randsburg, CA

gold ores, containing as little as .02 ounces, to be mined profitably. Because conventionally mined, high-grade ore bodies were largely exhausted, mining industry enthusiasts welcomed the technology when the U.S. Bureau of Mines began promoting the cost-effective technique in 1969 [19]. Detractors of the cyanide heap leach method have compared it to "dirt mining."

Indeed, cyanide heap leach operations require massive earth moving, along with the energy to do so, plus billions of gallons of groundwater for processing ore. At some Nevada heap leach operations, whose production equals three quarters of all gold mined within the United States, up to one hundred tons or more of material is unearthed to yield a single ounce of gold [20]. Earthworks, a mining watchdog

group, estimates that the production of one gold wedding ring today generates at least twenty tons of mine waste along with thirteen pounds of toxic emissions containing lead, arsenic, cyanide and mercury [21]. The Environmental Protection Agency (EPA) ranks the industrial-scale metallic mining as the nation's top polluter of chemical compounds released into the environment [22].

The process is designed as a closed loop system where highly alkaline aqueous sodium cyanide solution is dripped or sprayed onto industrial plastic-lined concrete pads laden with massive mountains of ore [23]. Once applied, the oxygenated "lixiviant" or leaching solution percolates through the heap, binding with the gold, eventually collecting into underground piping leading to the "preg

pond," which, as its name implies, is "pregnant" with microscopic gold. The process takes several weeks to months to complete—depending on the grain size of the ore and the height of the pad.

This concentrated gold-bearing cyanide liquor is then pumped into the recovery plant where giant vertical tanks containing very fine activated carbon that my friend, Tom O'Donnell, former metallurgist at the Rand Mining Company (RMC)[24] and long-time Randsburg, California resident, gleefully states, "the gold loves." Attracted to the carbon, the gold abandons the cyanide to wait for further processing. The now-barren cyanide solution is replenished and re-circulated onto the leach pad. If, during the process, the massive mountain of ore somehow collapses—the entire operation is halted so the heap can be bulldozed back onto the pad. The ongoing threat of cyanide escaping this closed loop system is never taken lightly; "You never, ever, let that stuff get off that pad. You got people there 24 hours a day and that is their job to keep that cyanide inside the fence," O'Donnell states.

After filtering this gold-bearing carbon concoction, caustic soda is added, dissolved and heated, which in turn, releases the gold from the carbon to produce a highly-concentrated gold-bearing solution. This mixture is pumped into a "cell" with positive and negative termination where it undergoes the electrowinning process first developed in 1807. A strong electrical current causes the gold to collect in the cell's negatively-charged steel wool that is later recovered by melting the wool with flux in the furnace at around 2,100° Fahrenheit. Eventually, the iron rises to the surface and the heavier gold sinks to the bottom. The iron and flux is discarded leaving the remaining gold to be poured and molded into gold doré buttons ready for further refinement.

Magical, yes, but when all is said and done, a number of the world's biggest cyanide heap leach operations have failed miserably over time. To date, the largest cyanide-related catastrophe in the U.S. occurred at the Summitville Mine in southwestern

Colorado. In 1992, after leaching around ten million tons of gold and silver ore over a five-year period, resulting in 160 million gallons of cyanide-laced water, Canadian-based Galactic Resources Ltd. filed for bankruptcy and abandoned the site.

Soon it was disclosed that nearly 85,000 gallons of cyanide-contaminated waste along with acid mine drain containing heavy metals had leaked in the neighboring watershed including the nearby Alamosa River completely killing off all fish and other riparian wildlife over a seventeen-mile stretch of the river [25]. The mine became a Superfund site in 1994, eventually requiring \$250 million of federal funding for remediation plus an ongoing \$2 million per year bill that Colorado taxpayers will need to continuously pay for many years to come. The Summitville Mine's owner, Robert Friedland, who holds dual citizenship in both Canada and the U.S., ended up paying only \$20 million out of pocket for remediation work of the Alamosa River but took in an estimated gross income of \$150 million from the mine while it was operational [26].

The Zortman-Landusky mines, bordering the Fort Belknap homeland of the Assiniboine (Nakoda) and Gros Ventre (Aaniiih) Nations in the Little Rocky Mountains of north central Montana, provides another example. One of the first heap leach operations in the county, the Zortman-Landusky had had numerous cyanide spills while operational with the largest single incident involving 50,000 gallons [27]. Over time, related surface and groundwater pollution has resulted from their gold and silver mining activities in the form of extensive acid mine drainage plus arsenic, lead, and other heavy metal contamination. The mine's owner, Canadian-based Pegasus Gold Corp., began mining operations in 1979. Nineteen years later they went bankrupt and walked away from this ongoing water pollution disaster that has to date cost \$100 million along with an additional \$2 million a year paid by the state of Montana to contain the contaminated wastewater. Even though Pegasus set aside bond monies for

such disasters, as required by law, taxpayers have taken up the bulk of the reclamation costs with the total clean up estimated to be in the tens of millions of dollars.

Understandably, a Montana citizen's initiative banned cyanide heap leach operations in 1998. Wisconsin followed in 2001. Since that time other disastrous spills have occurred in North America include the 2014 Mount Polley Mine tailings pond dam breach at Imperial Metals in British Columbia and the Colorado's 2015 Gold King Mine acid mine drain spill where the Environmental Protection Agency (EPA) and subcontracted workers charged with cleaning up the abandoned mine ended up accidentally releasing toxic water into the Animas River watershed. Cyanide heap leach operations continue to operate in California and Nevada—even though the EPA states that mining interests have polluted streams in 40 percent of the West's watersheds [28]. In 2017 alone, metallic-bearing mines generated nearly two billion pounds of toxic waste—equaling half the amount produced by all industries combined nationwide [29].

Nevada, the nation's largest producer of gold, currently allows new mines to begin operations with full disclosure that they will pollute the surrounding watershed—possibly in perpetuity—which could require indefinite remediation to clean up contaminated groundwater, streams and pit lakes. The 2019 Udall/Grijalva bill, if passed, would ban this practice [30].

Jim Kuipers, a hardrock mining engineer consultant, stated in a 2003 Mineral Policy Center report that taxpayers are likely to foot \$1 to \$12 billion in projected clean up costs at hardrock metallic mining sites across the country due to lax regulation and inadequate financial assurance upon mine closure or abandonment. The EPA says this figure is higher—\$35 billion or more to remediate abandoned mines found across thirty-two states [31].

But this story is more complicated than it appears at first glance. Tom O'Donnell, a.k.a. "Ordinary Tom," defends the process, having overseen the cyanide heap operation at RMC from 1989 to 1994. RMC's 2,520 acres of public and private holdings included the historic Baltic, Lamont, and Yellow Aster mine, whose original "glory hole" was subsumed by RMC's heap leach operation. During active production, RMC, on average, processed 45,000 tons of material ultimately recovering one million ounces of gold over the eleven years the mine complex was operational [32].

Tom, a kind, gracious, progressively-minded man, now in his mid-sixties, began his career path in the Air Force where he served in Vietnam as a Crash Rescue Firefighter. Having been honorably discharged from the military in 1968, Tom worked a variety of jobs throughout the western United States and Alaska, including a stint as a photojournalist stringer for the Seattle Post Intelligencer, a cook on a tugboat, a logger and long hauler. After delivering a load to a mine in New Mexico, he was hired on the spot as a hardrock miner, which led him back to Alaska until he returned to New Mexico, eventually enrolling at Socorro's New Mexico Tech chemistry program. After graduation he worked at a number of western mining operations, including RMC, plus a later stint at Panamint Valley's Briggs Gold Mine located near Ballarat, California. But by his late thirties he had already determined that he could physically toil underground for just so long so overseeing heavy equipment operators, massive earthmovers and construction crews required for this new type of "mining" operation at RMC served him well.

O'Donnell is fascinated by the alchemy of the cyanidation process stating that "we don't know exactly how the gold complexes with cyanide, or, for that matter, why it releases into the carbon." When asked about the downside of the cyanide heap leach process, including its poor environmental report card, he'll defend his work at RMC stressing, "who lives closest to the mines—the miners!" Although our opinions differ about the merits of cyanide heap leach technology and mining microscopic gold and



The Consolidated Mine adjacent to O'Donnell's Randsburg home. A couple of old timers worked this underground mine into the 1980s. It has been shuttered since.

other profitable metals at such a massive scale, I respect Tom immensely as he is open to debate and willing to consider multiple sides of this contentious issue. Tom, reflective of many other men and women like him, are proud of their careers in the mining industry, which provides much needed skilled and higher-than-average paying jobs in many rural regions of the West. His friendship provides an insider's look into an industry that I would not have encountered in my day-to-day life if I had not embarked on a project looking closely at the culture and geology of the Mojave Desert.



Large-scale, industrial mining in Randsburg faded out during the early 2000s when RMC shuttered operations leaving off-roading and related tourism

as the primary economic force driving the community. The BLM continues to manage the Rand Mining District's public lands, including the plethora of abandoned mines surrounding the town.

It should be mentioned too that RMC, like many other industrial operations of similar scale, had its share of accidents and wildlife fatalities, but no single incident was exceptionally newsworthy [33]. This is perhaps due to the fact that catastrophic surface stream and watershed contamination is less of an issue in the Mojave Desert due to the absence of such pronounced aquatic features near most of the region's desert mining sites [34]. Still, these former mining operations present other serious environmental challenges including ground, airborne and groundwater contamination.

In early 2006, it was determined by the Department of the Interior (DOI) that the Rand Mining



Thousands of abandoned mining hazards like this one in Goldfield's historic mining district are scattered across the Mojave Desert.

District (RMD) had severe levels of arsenic contamination measuring 4,700 times higher than what the EPA considers acceptably safe, triggering a rarely-enforced DOI Flash Report [35]. Arsenic is a common, naturally occurring element. Generally, it is a significant component of gold deposits found within the western United States. In areas that have been extensively mined arsenic levels are often elevated, which can lead to environmental contamination.

This well-known poison can be toxic and can cause mortality to both humans and wildlife. Mining processes unearth and concentrate arsenic in spent mine tailings and waste ponds, which sometimes leads to groundwater contamination. The 2007 DOI report identified "arsenic contamination in over 3,000 acres of mine tailings and 500,000 tons of additional mining related waste rock" within the RMD estimating the cost to cleanup at \$170

million—at the time considered to be the largest BLM remediation project in its history [36]. Responding to the DOI report the BLM initiated their Abandoned Mine Lands (AML) program in 2009 to deal with the issue.

In addition to arsenic contamination, high levels of toxic mercury, lead and other heavy metals were also measured throughout the site but airborne arsenic hazard carried by dry desert winds and exacerbated by recreational off-road use is still the main health concern. The 2007 DOI report listed as many as 30,000 visitors utilizing the area on holiday weekends. For many years, off-roaders drove on the popular Route 110 trail leading across a sixty-acre arsenic-contaminated former mill site before it was closed in 2007 due to its potential to expose riders to toxic dust. Off-highway vehicle (OHV) trails on desert public lands within the surrounding area were

posted with warning signs and/or cordoned off thus limiting recreational access.

Because Randsburg is economically dependent on OHV recreation and related tourism the closures proved controversial for business owners and many local residents. After BLM oversaw mitigation work at the mill site that included fencing off and capping the arsenic hazard with an earthen berm, rerouting Route 110 alongside the fence line and posting arsenic warning signs, the trail was reopened to riders. When asked about the arsenic contamination O'Donnell casually brushes the issue aside commenting, "Well, no one in town has died from arsenic as far as I know and we've have had our share of old timers that have lived to nearly one hundred."

In 1984 and 1997, the BLM allowed the Randsburg and other area residents to purchase titles to their properties but only if buyers agreed to indemnify or hold harmless the federal government in regards to exposure to hazardous materials from mining activities. BLM supervisors had known about the district's arsenic contamination for decades but failed to officially test and assess how widespread and serious the hazard actually was. A 2008 DOI audit report additionally criticized the agency for its marginalization of the arsenic contamination issue along with its neglect to identify and secure physical hazards at the many abandoned mines found across the public lands they manage. Indeed, the report stated that some BLM employees had even received threats after identifying grossly contaminated or unsafe former mining sites because their supervisors worried, that in some cases, by identifying the hazard the agency would be more susceptible to lawsuits [37].

True, these physical safety hazards are not exaggerated. Every year, curious explorers of abandoned mines, both seasoned and amateur, along with a number of unwary victims are seriously injured or even die after knowingly or unknowingly entering one of these many dark, subterranean spaces. Accidents include falling or driving vehicles into shafts,

encountering poisonous gasses or no air at all deep inside tunnels, drowning in flooded chasms, being crushed when aging mine support structures fail or even being blown to bits by long forgotten stashes of dynamite.

Forty plus accidental deaths have been documented in abandoned California desert mines since the mid-1970s. In separate incidents, three people accidentally fell to their death upon entering the "ant trap" funnel mine shaft of the Goat Basin Mine bordering the eastern edge of Joshua Tree National Park. Several deaths have occurred in the Rand Mining District, including that of twenty-one year-old Matthew Frey who would plunge to his demise in November 2004 after riding his motorcycle up a moderate incline and falling into a 700-foot-abyss in the neighboring Spangler Hills OHV area.

Two years before Frey's death, a fourteen-year old boy would be luckier—this dirt bike rider would tumble into a nearby 780-foot shaft but was saved after landing on a support beam some 200-feet below. Sterling White, who administers the BLM's California AML program commented that Randsburg's Baltic Mine area alone had 300 holes to his agency had to contend with. In 2019, they will oversee sixty mining-related "features" requiring securing in the Red Mountain area. Indeed, out of the thousands of identified abandoned mining sites, each has up to a dozen hazardous mining-related features that require mitigation. Millions of dollars have been spent so far in an ongoing effort to do so.

Other OHV-related fatalities resulting from falling into abandoned mines would occur in the Calico Hills OHV area and other areas of the Mojave Desert. In 2007, a young girl died when she and her sister accidentally drove their all-terrain vehicle into a 125-foot mineshaft while riding in the Windy Point Recreation area outside of Kingman, Arizona. unsuspecting tourists have nearly backed into holes large enough to swallow entire vehicles. A rancher on horseback survived a fall into a collapsed horizontal shaft or adit. Dogs have been successfully

rescued, but certainly this has not been case for the multitude of livestock and wildlife that have unwittingly plunged to their deaths. Sadly, dead bodies are sporadically found dumped in mineshafts as well. The BLM, NPS, private landowners and even recreational off-roading clubs such as the Havasu Four Wheelers have secured some of the most egregious hazards, often using steel bat gates, but many remain humanly accessible—sometimes because fences or warning signs are illegally removed. Still, the BLM discourages community involvement because anyone or group doing so then becomes legally liable for any accident or death that may occur after the modification.

Abandoned underground mines have found reuse as Cold War-era bomb shelters, and more creatively, as a community-led time capsule project. Various municipal civil defense entities have in the past outfitted subterranean spaces for nuclear fallout shelters—some equipped with enough supplies to support 17,000 survivors, provide decontamination plus a water supply. Such was the case of U.S. Borax's tunnel shelter constructed within the old Suckow colemanite mine now part of the open pit Rio Tinto Mine in Boron, California [38]. Victorville provided a similar service for 200 individuals at the nearby Apex Mine. The Sidewinder Mine, located between Victorville and Barstow, could host 859 people in the event of a nuclear war providing them with 200-bed hospital, a library and exercise room in exchange for materials, cash and/or labor to secure their spot. A seed bank was also housed here.

Rosamond, California's 300-foot long Tropico Time Tunnel, housed in a former gold mine [39] of the same name donated for the purpose, was sealed with concrete on November 20, 1966 containing a brand new Yamaha motorcycle, a baseball autographed by Willie Mays, a model of the XB-70 bomber, a typewriter, twelve copies of the Antelope Valley Press, a packed suit case, a female mannequin and a local's favorite fishing shirt among many other mundane domestic and everyday objects donated for

the purpose by local residents. The time capsule was the brainchild of Jack Tomlinson, a San Francisco State University biology professor. The public mine sealing event coincided with Kern County's centennial with the "unsealing" of the capsule scheduled for the county's 100th birthday in 2066 [40].

Just a few miles north of the Tropico Mine is the only industrial cyanide heap leach operation currently active in the Mojave Desert. The Canadian-owned Golden Queen Mine LLC in Mojave, California runs 24/7 on Soledad Mountain, located just west of State Route 14. Gold was originally discovered here in 1894. Along with the Randburg's Yellow Aster, these two mines produced half of all gold mined in Kern County. Several of Soledad Mountain's mines were consolidated into the Golden Queen Mining Company in 1935 which operated until 1942 when Limitation Order L-208 was enacted effectively outlawing mining of non-strategic metals such as gold and silver during wartime. The majority of the Mojave District gold and silver mines have remained inactive after WWII ended.

The company that currently runs Golden Queen purchased it during the mid-1980s but did not commence operations until 2016. As of July 2019, Golden Queen LLC's stock was listed at \$0.0155 per share. Their website published a one-month loan payment extension in the amount of \$75,000 posted on January 31st, 2019.

Further west, on the southwestern slope of the Panamint Range near Ballarat in Inyo County, lies the inactive Briggs Gold Mine named after Harry Briggs who operated a mill and cyanide plant below nearby Manly Falls during the 1930s. CR Briggs Corporation began their open pit heap leach operation in 1996, producing 550,000 ounces of gold until they shuttered operations in 2004 [41]. CR Briggs was invariably a highly controversial mining operation due to its proximity to Death Valley National Park, which is a mere stones throw away. When gold prices rose in 2009, Atna Resources LTD reopened the mine but went bankrupt by 2015. DV Natural Re-



A view of Columbia Mountain, Goldfield, NV. Just north of the peak are the infamous Sandstorm group of claims that launched Goldfield's rush in 1902.

sources, LLC, a Virginia-based company currently owns the mine. Renewed attacks on the 2016 Desert Renewable Energy Conservation Plan (DRECP) by the Trump administration that have previously protected Panamint Valley from further industrial mining activities may allow Briggs to resume operations along with a separately proposed lithium mine on the valley floor.

East of Briggs and about one hundred miles west of Las Vegas, the Castle Mountains rise out of northern Lanfair Valley. The Hart Mining District had previously sprung to life here in 1907 after gold had been discovered. Hart faded out by 1915 but seventy-five years later Viceroy Gold Corporation would resume mining operations via cyanide heap leach until they, too, closed in 2001. NewCastle Gold Ltd. would purchase the 1,375-acre site in 2012 and re-

sell it in October 2017 to Vancouver-based Trek Mining Inc., soon after renamed Equinox Gold [42].

A year before the sale, President Obama had signed an act designating a remote 20,920-acre parcel surrounding the site as the Castle Mountain National Monument—just before he left office in January 2016. His effort would fill a missing piece of the Mojave National Preserve that borders the mine on three sides. Obama's designation was celebrated as a suitable compromise for both the mining industry and environmentalists but with one hitch—the deal included an option to continue mining though 2026.

Behind closed doors it is apparent that NewCastle was not entirely happy with the Obama administration's earlier deal. By mid-2017, if only by coincidence, Representative Paul Cook (R-Yucca Valley) demanded that former Interior Secretary Ryan Zinke reduce the monument by 50 percent. It



The town of Goldfield, NV at sunset viewed from the historic mining district

should be noted that NewCastle was in the process of selling the mine to Trek/Equinox during Cook's request. More revealing is the urgency to suddenly reopen the mine—apparently driven by language within the monument designation stating that if no mining resumes within ten years of the act's signing then the holdings would be transferred to the National Park Service thus becoming part of the larger Mojave National Preserve. Cook's boundary adjustment request continues to be under consideration by Zinke's replacement David Bernhardt. If realized, the mine's activities will create ongoing vehicular traffic, noise disturbances, possible pollution along with excessive groundwater depletion that will most likely impact the sensitive Piute Spring, the only perennial stream in the area.

Equinox Gold completed their pre-feasibility study in July 2018. Construction of the heap leach pad and commissioning of the processing plant is

expected for late-2019. Their website states, "The Castle Mountain heap leach gold mine in California produced more than one million ounces of gold from 1992 to 2004. Equinox Gold intends to put the mine back into production with the expectation of producing 2.8 million ounces of gold and generating U.S. \$865 million in after-tax cash flow over a sixteen-year mine site [43]." To do so, Equinox will need to re-excavate fifty-one million tons of material that was previously dug out and used to fill the pit it had created during the process. It appears that looser federal mining regulations bought on by the Trump administration are the incentive to begin gold mining here and in other areas of the Mojave.

Perhaps most disturbing is an ongoing proposal for an open pit cyanide heap leach operation within the Inyo Mountains' remote Conglomerate Mesa, located west of Death Valley National Park. The mesa lies directly south of Cerro Gordo Peak and just

north of the Malpais Mesa Wilderness. Unlike the heap leach mining operations at Soledad and Castle mountains or even Randsburg, where extensive mineral extraction had previously occurred, Conglomerate Mesa has never been historically mined although the area was used to primitively produce charcoal for the nearby Cerro Gordo Mines. The mesa is an important indigenous site for local tribes having served historically as a seasonal piñon seed harvesting area. Since 1984, no less than ten mining companies have tested for gold at this rugged, roadless 7,000-acre site and left, dissatisfied with their findings.

The latest outfit to do so is Vancouver-based Silver Standard Resources (now SSR Mining Inc.), owner of Nevada's Marigold Mine, an enormous Carlin-type heap leach operation located in northwestern Nevada. SSR obtained permits in May 2018 from the BLM for seven 1,000-foot exploratory test-drilling sites to be accessed entirely by helicopter for their speculative "Perdito Exploratory Project." SSR's exploration activities would have necessitated up to 1,000 gallons of water per day requiring a hose line to be laid from an existing road to the drilling site, 24/7 illumination of the work area to allow for continuous construction and drilling plus multiple daily helicopter flights to transport crew members, drilling rig, generator, outhouse and other necessary equipment—in a setting devoid of human activity other than an occasional jet flying miles overhead [44].

Conglomerate Mesa is designated California Desert National Conservation Lands under the 2016 Desert Renewable Energy Conservation Plan (DRECP) with an Area of Critical Environmental Concern (ACEC) requiring "special management attention" by the BLM. Previous test drilling at the Perdito site yielded unsatisfactory results. Not surprisingly, under mounting opposition from public and environmental groups, SSR withdrew its application by mid-summer. However, the actual claim-holders, partners Steven J. Van Ert and Noel Cousins, both of Chatsworth, California, who have 444 twen-

ty-acre active mineral lode claims between them, on or near the mesa, covering 8,800 acres, were given the option to transfer the drilling authorization to themselves [45]. This provides Van Ert and Cousins with an opportunity to "indefinitely pitch the project to other mining companies, leaving the future of Conglomerate Mesa in limbo [46]."

Keep in mind that the annual maintenance fee for each of these Conglomerate Mesa area claims is \$155 so the duo must pay a total of \$68,820 in federal fees a year just to retain their active status [47]. According to a December 2017 article by Tom Budlong in Desert Report if they had been successful in securing SSR to test drill here, Van Ert and Cousins would have collected \$710,000 for a three-year lease option and several million more once production began, according to SEC documents filed on March 22, 2016 [48].

Friends of the Inyo and several other environmental groups filed for the BLM to conduct a formal review by the state director of the project in November 2018 expecting to hear a decision within three months but the winter 2019 government shutdown delayed it until May when it was announced that the "Perdito Project will stand and exploratory drilling can move forward [49]." If Van Ert and Cousins enlist some new company to explore and mine at Conglomerate Mesa, a bleak and discouraging precedent in wildlands protections will be set allowing multinational extraction corporations to swoop into California and other western states and set up industrial-scale heap leach operations wherever they see fit.

Biologists stress, too, that keeping Conglomerate Mesa remote and undeveloped is critical for the endemic Inyo Rocky Daisy (*Perityle inyoensis*) that is classified a BLM-sensitive species and also for the Joshua tree (*Yucca brevifolia*) in that as the species begins its retreat due to climate change from lower elevations, including Joshua Tree National Park, to higher areas at 3,800 to 7,700 feet, wilderness areas such as the mesa will afford a haven for the retreat-

ing species and provide a crucial habitat for its ongoing survival.

Over the state line in Nevada, the Bullfrog/Beatty Mining Districts remain the only active large-scale gold mining areas within the state's eastern Mojave Desert. Nevada is the nation's top gold producer with the majority of the state's active open-pit industrial-scale gold mines located in its northwestern Great Basin interior where massive Carlin-type gold reserves are geologically situated.

At the start of 2019, the Pahrump Valley News reported that Beatty was undergoing a gold mining renaissance—two major international gold extraction corporations were conducting exploratory drilling, including South Africa-based AngloGold Ashanti, noted to be the third largest gold producer in the world. Several smaller players, including a couple of U.S. based mining companies, were also conducting feasibility testing and research.

The Sterling Gold Mine, located fourteen miles southeast of Beatty, California, was operated between 2007 and 2011 by Vancouver B.C.-based, Imperial Metals—the same outfit responsible for the August 2014 Mount Polly mine tailings breach. Canadian-based Northern Empire Resources, Corp. purchased Sterling from Imperial Metals for \$10 million in May 2017, flipping the property a year and half later when major player Coeur Mining Inc. acquired Sterling in August 2018 for \$90 million—a transaction reflecting the dizzying world of speculative international metallic mine trading.

It is interesting to note the Pahrump Valley News reported in March 2014 that Northern Empire's mining activities had forced the Nevada Department of Wildlife to relocate "herds" of bighorn sheep from the active mining area—operational for a mere four years. Sterling's general manager Chuck Stevens was quoted in the article stating, "Because the herd is so large they're flying them out of here and shipping them out of state. They net them on the mountain range, fly them down, then we give them a physical exam, measure them, weigh them, put

them in a trailer and haul them to wherever they're going to relocate them [50]."

In Arizona's northwestern Mojave Desert, known for its own rich history of nineteenth century gold mining, the historic 1902 Gold Road Mine at Oatman, Arizona, was operated as a cyanide heap leach from 1995 until 1998 and then reopened from 2010 to 2016. Columbia-based Para Resources Inc. which "specializes in low-risk, low-cost gold projects in North and South America that have strong development potential" purchased this fully-permitted modestly-sized mine for \$7 million in August 2017 and began underground mining operations in late 2018 [51].



Mining will always be a crucial part of our nation's economy. While many materials, chemicals and products used in everyday life are derived from rich mineral resources extracted within the Mojave Desert, gold, mainly mined worldwide for economic gain and adornment, serves no real benefit for humankind—other than the continued exploitation of publicly-held mineral resources that provide enormous profits for a handful of mostly foreign-based multinational enterprises and their investors [52]. Gold should be the first metallic mineral in line to be levied with a substantial, but sensible, royalty when commercially extracted. Regulators must additionally require independent and comprehensive closure bonds that cover the true costs of long term environmental remediation after production ceases. And last, tighter environmental regulations are needed to reign in this unbridled industry that has for over 150 years been a Congressionally favored recipient of the last remaining federal land giveaway plus many other generous federal and state subsidized tax breaks and perks.

Tom O'Donnell, and other pro-mining advocates like him, argue that industrial gold mining operations require owners to assume huge upfront financial risks just to begin operations and are lucky



The Canadian-owned Golden Queen Mine in Mojave, California runs 24/7 on Soledad Mountain, located just west of State Route 14. As of July 2019, it is the only cyanide heap leach operational within the Mojave Desert.

if they manage to make a 5 percent profit on their gross income. He stresses that for every dollar a mining company spends internally the amount is multiplied and dispersed seven fold within the local economy. Those statements may be true, but if the massive infrastructure, energy and human power funneled into the world's gold mining endeavors are, in turn, channeled to sustainably mine the materials required during our transition towards a non-fossil fuel-based clean energy future then there should be more than enough jobs for miners along with sustained regional economic development within the Mojave Desert and Great Basin for years to come.

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Rhyolite, NV was the last of the great Mojave Desert gold towns to go bust.

#### FOOTNOTES:

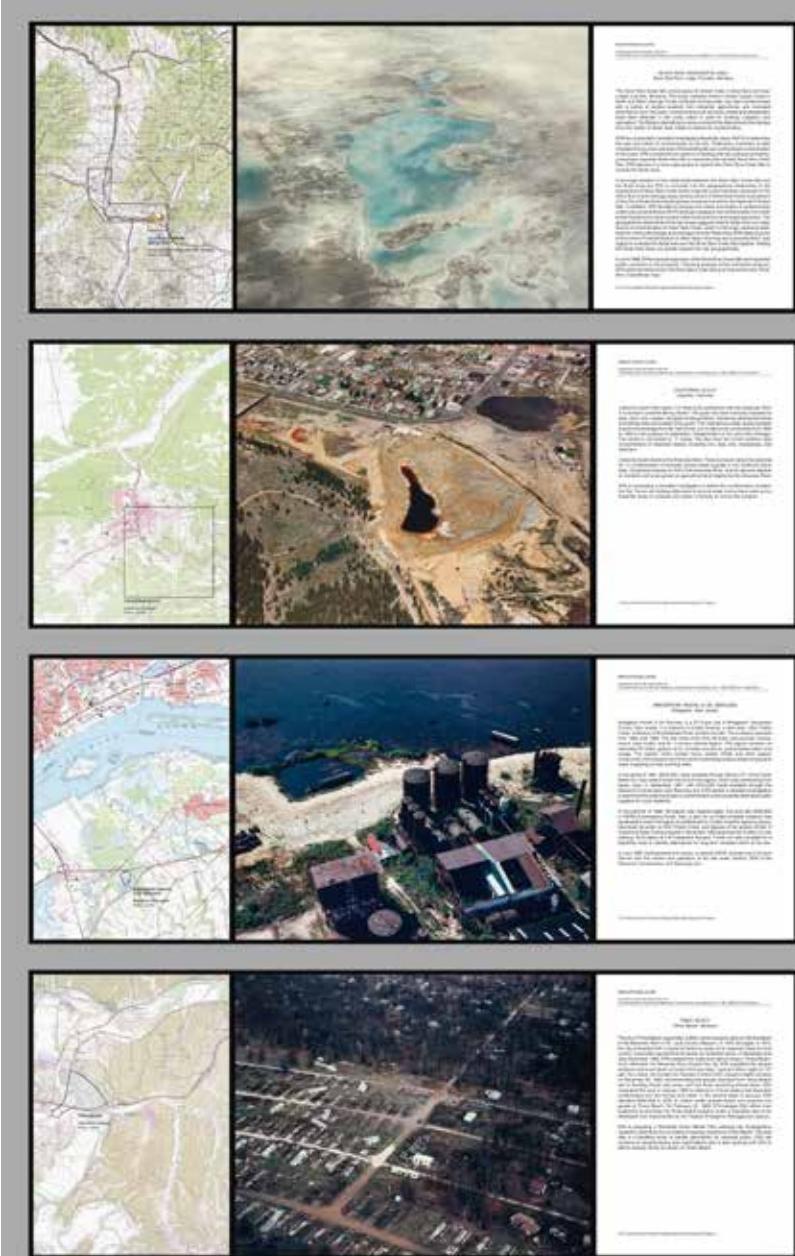
- [1] Legally “prudence” is defined as a reasonable person willing to expend additional money, time and energy into developing a mineral claim because they deem it to be of value.
- [2] The Diggings™ figures listed as of August 8, 2019. Nevada has the most active mining claims at 204,975. Source: <https://thediggings.com/usa/nevada>.
- [3] Josh Harkinson, “Harry Reid, Gold Member,” Mother Jones, March/April 2009.
- [4] “1872 Mining Law Patenting Fact Sheet,” Taxpayers for Common Sense, June 12, 2006.
- [5] “Barrick Reports 2018 Full Year and Fourth Quarter Results,” Barrick press release, February 13, 2019.
- [6] Associated Press, “GAO report shows royalties from hard-rock mining could generate billions for U.S., if collected,” Missoulian, December 13, 2012.
- [7] Pew’s annual figure includes the combined cost of lost royalties, tax breaks and federal subsidies. An additional \$20 to \$54 billion for annual cleanup costs is not included. “Reforming the U.S. Hardrock Mining Law of 1872: The Price of Inaction (Fact Sheet),” The Pew Campaign for Responsible Mining: Reclaim Our Future, January 27, 2009, 2.
- [8] Harkinson “Harry Reid.” Reid’s two sons work for law firms representing mining interests and his son-in-law is a pro-mining lobbyist.
- [9] Senator Dale Bumpers, “Capitol Hill’s Longest Running Outrage,” Washington Monthly, January/February 1998.
- [10] Harkinson, “Harry Reid Gold Member.”
- [11] “Reforming the U.S. Hardrock Mining,” 2.
- [12] Jennifer Solis, “Reform of 1872 law would make Barrick, Newmont pay federal mineral royalties,” Nevada Current, May 10, 2019. The Obama administration later joined with lawmakers in supporting and implementing metallic mining reforms.
- [13] Solis, Nevada Current.
- [14] The Goldstrike mine and nearby Cortez complex are owned by Barrick Gold Corporation, the largest gold company in the world. Source: <https://www.barrick.com/English/operations/barrick-nevada/default.aspx>.
- [15] Karen K. Swope and Carrie J. Gregory, “Mining in the Southern California Deserts: A Historic Context Statement and Research Design,” Technical Report 17-42, Statistical Research, Inc., Redlands, California, October 2017. Submitted to Sterling White, Desert District Abandoned Mine Lands and Hazardous Materials Program Lead, U.S. Department of the Interior Bureau of Land Management, California Desert District Office, Moreno Valley, CA., 22.
- [16] “California Code of Regulations (CCr) §3704.1. Metallic Mine Backfill Regulations Explained,” State Mining and Geology Board, Department of Conservation, State of California, Natural Resources Agency, 2003.
- [17] Carl Wilhelm Scheele discovered that gold dissolved in aqueous solutions of cyanide in 1783.
- [18] Jane Perlez, “Behind Gold’s Glitter: Torn Lands and Pointed Questions,” New York Times, June 14, 2000.
- [19] The agency was abolished in 1996.
- [20] Perlez, “Behind Gold’s Glitter.” “Cyanide can convert to other toxic forms and persist, particularly in cold climates.”
- [21] Neha Inamdar, “With This Ring: The Environmental Cost of Gold Mining,” Mother Jones, September 10, 2007.
- [22] “TRI On-site and Off-site Reported Disposed of or Otherwise Released (in pounds), for All chemicals, By Industry, U.S., 2017,” Environmental Protection Agency (website), accessed July 29, 2019.
- [23] Ore is sometimes processed at a crushing/screening plant but often just moved onto the pad after the rock has been blown up. This type of operation is referred to as a “run of mine.”
- [24] RMC was owned and operated by Glamis Gold, Ltd. based in Reno, Nevada. RMC was later acquired by Vancouver, B.C. based, Goldcorp Inc. in 2006.
- [25] Michelle Swenson, “Legacy of Hard Rock Mining in the West—Death of a River, a Community’s Response,” HuffPost, September 2, 2015 (updated September 2, 2016). It should be noted that some of the area streams are naturally acidic due to natural geological processes thus exacerbating the man-made pollution.
- [26] “A total of 294,365 troy ounces (9,155.8 kg) of gold and 319,814 troy ounces (9,947.3 kg) of silver were recovered [from the Summitville mine].” If one does the math, considering gold prices averaged \$400 per ounce during the late 1980s, Friedman’s gross income hovers somewhere around \$150 million. “Summitville mine,” Wikipedia, accessed July 29, 2019, [https://en.wikipedia.org/wiki/Summitville\\_mine](https://en.wikipedia.org/wiki/Summitville_mine).
- [27] Sara Orvis, “Zortman-Landusky Gold Mine, Montana, USA,” Environmental Justice Atlas, September 12, 2014.
- [28] EPA, Liquid Assets 2000: America’s Water Resources at a Turning Point, 2000, 12.
- [29] Mark Olalde, “Mining Companies Polluted Western Waters. Now Taxpayers Have to Pay for the Clean Up,” Mother Jones, March 18, 2019.
- [30] Solis, “Reform of 1872 law.”
- [31] EPA, Liquid Assets, 12.
- [32] RMC operations began in 1987 and ended in 1998.
- [33] David Darlington outlines RMC’s rather contentious tenure in Randsburg in his 1996 book, *The Mojave*. Darlington states that RMC ran its operation so tight in May 1994, 150 of its hourly-paid employees organized themselves under Local #30 of the International Longshoremen’s and Warehousemen’s Union in protest of “low wages, arbitrary dismissals and safety shortcuts.” For further reading see: David Darlington, *The Mojave* (New York: Henry Holt and Company, Inc., 1996), 213–221.
- [34] There are exceptions in the Mojave Desert including the seasonally flowing Mojave River, Amargosa River plus many springs and seeps found throughout the region.
- [35] “Flash Report: Environmental, Health and Safety Issues at Bureau of Land Management Ridgecrest Field Office, Rand Mining District (C-IN-BLM-0012-2007),” U.S. Department of the Interior, Office of Inspector General, September 2007, 1.
- [36] “Flash Report,” 2.
- [37] “Audit Report: Abandoned Mine Lands in the Department of the Interior (C-IN-MOA-0004-2007),” U.S. Department of the Interior, Office of Inspector General, July 2008, 1. It seems that BLM officials were worried about liability—identifying the hazards made them more susceptible to lawsuits.
- [38] Swope and Gregory, Mining in the Southern California Deserts, 62.
- [39] The Tropico Mine, originally called the Lida, began life as a clay mine until gold was discovered. The gold mine was worked from the 1890s into the start of WWII.
- [40] Swope and Gregory, Mining in the Southern California Deserts, 62.
- [41] CR Briggs’ parent company, Canyon Resources Corporation of Golden, Colorado, unsuccessfully led the fight in 2004 to undo Montana’s 1998 cyanide heap leach ban.
- [42] Equinox Gold additionally operates Imperial County’s massive Mesquite Mine, the largest producing open pit heap leach operation in California.
- [43] “Castle Mountain Gold Mine,” Equinox Gold (website), <https://www.equinoxgold.com/projects/castle-mountain/> – snapshot.
- [44] Perdito Exploration Project Environmental Assessment (Environmental Assessment, DOI-BLM-CA-D050-2017-0037-EA), U.S. Department of the Interior, Bureau of Land Management, October 2017.
- [45] This figure was determined according to annual claim maintenance fees paid to the BLM in June 2018. Between the two men they have a combined 608 active and 1,771 closed lode claims within the Mojave Desert as of 2019. The duo also has a group of claims in the Malpais Wilderness. Source: <https://thediggings.com/owners/2278929> (Noel Cousins mining claims), <https://thediggings.com/owners/1176787> (Steven Van Ert mining claims)
- [46] News staff, “Update on mining at Conglomerate Mesa (Press release for Friends of the Inyo and the Sierra Club),” Sierra Wave Media, October 31, 2018.
- [47] As of September 1, 2019, the annual maintenance fee will be raised to \$165.
- [48] Tom Budlong, “Once Again Threatened by Gold Miners: Conglomerate Mesa, On the Western Rim of Owens Lake,” Desert Report, December 11, 2017.
- [49] The Friends of the Inyo: Conglomerate Mesa Newsletter, Vol. I, June 12, 2019.
- [50] Mark Waite, “Sterling Gold mine life may be extended,” Pahrump Valley Times, March 5, 2014.
- [51] “Projects: Gold Road Mine Project,” Para Resources (website), <http://pararesourcesinc.com/projects/gold-road/>.
- [52] It should be noted that many of these companies are foreign based-but primarily American-held in terms of their investors.

# PEGASUS GOLD

David T. Hanson

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The Zortman-Landusky gold mine in north-central Montana is located on what was originally known as Spirit Mountain, considered sacred by the Assiniboine and Gros Ventre Native American tribes. Between 1979 and 1998, Spirit Mountain was completely destroyed—crushed into ore and processed for gold by Pegasus Gold of Canada. The Zortman-Landusky mine used the common mining technique called open-pit cyanide leaching to extract gold from crushed rock. The toxic waste produced by this process was stored in open pits at the site. From 1982 to 1998, more than one dozen leaks and discharges profoundly and permanently altered the regional water supplies of the surrounding communities and Native lands. The Zortman-Landusky mine used one million pounds of cyanide annually. One gram of cyanide can kill a person. In addition, acidic drainage from the mine is so severe that water released from the mine must be treated forever. After taking \$400 million of gold from U.S. public lands, the Pegasus board of directors voted themselves multimillion dollar bonuses, declared bankruptcy (on January 16, 1998), abandoned the mining operation, and left the \$50 to 100 million cleanup cost to American taxpayers. Under the provisions of the Mining Law of 1872, Pegasus Gold of Canada paid no royalties to the U.S. Treasury for the minerals that were removed from public lands, and they had no responsibility for cleanup.



David T. Hanson, *Waste Land*, 1986/2019, archival pigment print, 25 inches by 40 inches

In 1998 Montana voters overwhelmingly passed a citizen initiative banning open-pit cyanide leach mining in the state. Montana remains the only state in the nation to prohibit open-pit cyanide leach mining.

All of the major cyanide leach mines that operated in Montana caused significant water pollution, and some will require water treatment in perpetuity. Hard-rock mining produces more waste by vol-



David T. Hanson, Pegasus Gold Co., Phillips County, Montana, 1991, chromogenic print, 16 inches by 20 inches

ume than all other industry sectors combined. Most hard-rock mines—gold, copper, or nickel, for example—west of the Mississippi were or are under the jurisdiction of the antiquated Mining Law of 1872. Its legacy includes 500,000 abandoned mines and the pollution of more than 40 percent of the headwaters of western watersheds, according to the Environmental Protection Agency. The EPA says that hard-rock mining is the nation's number one toxic polluter and has been ever since the agency started keeping track in 1998. History has shown that many operators abandon mines once the ore has been extracted, leaving the toxic waste and huge cleanup costs to the American public. The Mining Law of

1872 gives the U.S. government no ability to prosecute or go after polluters for cleanup costs. In most cases, the only money that the United States receives in return for the destruction of its public land is the paltry claims-maintenance fee. Since 1872 mining companies have extracted more than \$300 billion of publicly owned minerals without paying taxpayers a dime for them. Now the United States is faced with billions of dollars in cleanup costs.

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## SPECTACLES OF SMALL SCALE GOLD MINING IN INDONESIAN BORNEO

Nancy Lee Peluso  
University of California, Berkeley

On a sweltering day in October, 2014, eighty kilometers from the equator, every TV in the Singkawang metropolitan area was broadcasting pictures of a giant mining pit in the illegal mining complex they knew as Gowaboma. Police, reporters, and government officials tenuously negotiated the edges, debating whether the landslide's jurisdiction lay inside the city or the neighboring rural district. The extraction complex straddled both. Eighteen people had been buried alive, no bodies yet retrieved. The collapsing pit wall had entombed them under three to five tons of unstable peat and clay soils. Among the dead were eight men in a single crew who had been spraying the wall to break it down. Eight men and two women from Gowaboma village had been independent gold gleaners, searching for a few flakes among the tailings. Villagers had speculated that at least twenty or twenty-five were dead, based on a morbid local knowledge that had been built over the course of the twenty-seven-year gold rush. The rush had been marred by violence and accidental deaths, but was unmatched in its capacity for creating jobs. Within a week of the accident, the moratorium that police had imposed on mining in Gowaboma would end. Black smoke from diesel oil again rose over the site, the clatter of the multi-sized dredges and other sounds of extraction filled the air. Within a month, another pit wall collapsed, killing five. The following month eight more people died in a similar accident. Neither of the latter two episodes was reported in the news; neither garnered visits by the police.

The grandeur of the Gowaboma landscape inspires awe from rural residents who are not used to surveying a landscape from the top of a six-story

building. A few days before, I had been taking photographs from the edge of a twenty-meter-deep pit, when a worker remarked that the pit workers below looked "just like ants."

The sprayers create a muddy slurry that the dredge sucks up. A generator or a truck engine then sends the slurry through plastic cable pipes and up a sixty-foot wall to a long, tilted, wooden sluice sitting above the pit. Carpet pieces lain on the sluices catch the gold as the lighter mud passes over. Some fifty to a hundred workers labored that day in a single pit, working alongside the ill-fated crew. The crews ranged from twelve miners manning dredges powered by repurposed truck engines to small miners working alone or in pairs with tiny 1.5 horsepower dredges. Gleaners work small shaker tables. Others attach two boards to the end of the carpeted sluices built by the crew.

This extractive landscape with its pits, sluices, diesel-powered engines, and scurrying workers covered in dried mud, creates the impression of a single large industrial mine, yet no overarching corporate structure links them all together. Each crew forms a unit that divides the gold they collect through a share system. For their shares, each crew depends on their relationship to the mining boss or to a smaller-scale crew boss. These bosses in turn bear the costs of extraction; they buy the machinery, generators, cables, sluices, oil and gasoline. They pay the rent for a section of the pit to a self-proclaimed "landlord," even though parts of the complex had been leased to an oil palm corporation and invaded by the miners. Additionally, the boss pays the crew's subsistence needs while they work, along with "income taxes" to a mix of subdistrict officials, police, soldiers, city planners, and even local gangsters who make their rounds monthly, promise not to make trouble, and alert the miners when a raid is planned by the city or district office.

On drier land not far from Gowaboma, thousands of smaller pits occupy the back and side yards of houses, rice fields, and rubber gardens. My friend Joni took



Opening a New Pit, photo courtesy of Nancy Peluso

me to see his small mine, where a few years ago his mother and uncle had tapped rubber. A local river had flooded after a rainstorm the year before, carrying toxic tailings from a nearby mine into her rubber garden. Once the trunks of the rubber trees were engulfed by the gasoline and diesel-laced flood waters, they died. Although Joni's mom had rented access to the other four crews, Joni's crew paid no rent. The day we visited, we watched as men stood, sat, or swam in toxic water. A mechanic breathed in the fumes of the generator as he monitored a floating dredge underlain by four empty oil drums tied to a wooden raft. Nearby, three brothers worked in the panning pool, hard rubber pans glistening with a sheen of mercury as the sun was setting.

The minutiae of this industrial landscape are telling. Pieces of carpet and blue tarpaulin are strewn everywhere. The tarps make settlements and are

used for the walls and roofs of sleeping huts, as well as two-story "dormitories" where two dozen miners keep their clothes and sleep. Tarps also enclose drinking stalls where coffee, beer, and home-made moonshine are served by beautiful young women. The tarps are also used for making panning pools into which miners shake the sluice carpets, pan for gold flakes, and consolidate the gold into balls. Later the mercury used to consolidate the gold will be burned off with small blow torches.

The organization of gold extraction in these pits is reminiscent of the organization of other forms of natural resource extraction in Indonesian Borneo. Before the logging of the 1970s-90s, when state, military, and corporate logging concessions stripped the best lumber from the once extensive rainforests, non-timber products and logs were collected by men from forest settlements and mi-



Left: Morning Setup of the Sluice; Above: Beneath the Cracked Wall, photos courtesy of Nancy Peluso

grant crews from other parts of Indonesia. Workers organized around crew bosses and spent weeks or months at a time at the forest extraction sites. They, too, were paid in shares of the logs, rattans, or resins, and their food, coffee, sugar, and water were free while they worked.

In addition to the direct risks posed to mine workers, small-scale gold mining generates different risks for villagers living far from extraction sites. Hazards such as invisible mercury clouds and quicksand, which had recently swallowed a child on her way home from school, typify the risks of gold extraction in communities. On the driest ground, mining tunnels cave in—most are unsecured. When mining under rivers, at least one crew member has to dive to lay and maintain the cable pipe that carries the dredged river bottom to a sluice on shore. The hard-edged flexible four-inch-wide cable can slip and hit a worker with a wild smack, or parts of

a worker's raft can break and trap him underwater. The most dangerous environment is the marsh. Even with an oxygen tank strapped to his back and home-made goggles, an accidental collision with an invisible old tunnel stuck in the viscous stuff of the marsh can cause a massive rush of water as the pressure changes, drowning him as his mouthpiece and goggles slip off his face.

Miners attempt to protect themselves in ways that have nothing to do with the geological dangers of a site. Ritual practices are intended to appease, feed, and encourage the spirits to give up their gold, and to prevent against the spirits' depredations and tricks. Gold is a spiritual substance (*barang halus*) and rituals and food offerings are meant to preclude the more expensive and traumatic loss of human lives in mining accidents. Before beginning work or "opening new land" an indigenous or migrant miner will kill roosters or pigs to feed the spirits of



Above: Steamy Morning, Ketapang; Right: Placing the Dredge Cable, photos courtesy of Nancy Peluso

the land he is opening. Gold-colored jars are often placed in the shifted sands of mining sites in the hopes of appeasing both the gold and the souls of those lost in earlier accidents. There are behavioral taboos as well: All miners, from big bosses to workers sharing the finds, must mind their actions, their speech, and even their thoughts so as not to offend the gold spirits.

To see these disturbing scenes as chaos is simply wrong. The mining and other everyday practices of small-scale Indonesian gold miners are organized within social and economic networks that extend well beyond this site. They are entwined in myriad ways with Indonesia's formal economy. Thousands of large and small crews are transforming Borneo's previously forested landscape into vast pits and underground networks of tunnels. As Borneo's land is increasingly acquired by corporate concessions that

reduce rather than increase the work available, ordinary rural men have few choices but to seek jobs in the extraction of the gold that underlays their home territory. Small-scale gold mining is at once a curse and a saving grace; it has become a fact of their lives and livelihoods.

The exhibition "Spectacles of Small-Scale Gold Mining in Indonesian Borneo" will be on display at the Environmental Design Library at the University of Berkeley, California from January 12 to May 15, 2021.





Catherine Richardson, *Gold Ore*, 2018, mixed medium on Arches paper

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Catherine Richardson, *Small Mineral Hoard*, 2019, steel phone-wire box, plexi tubes, acetate, screen print

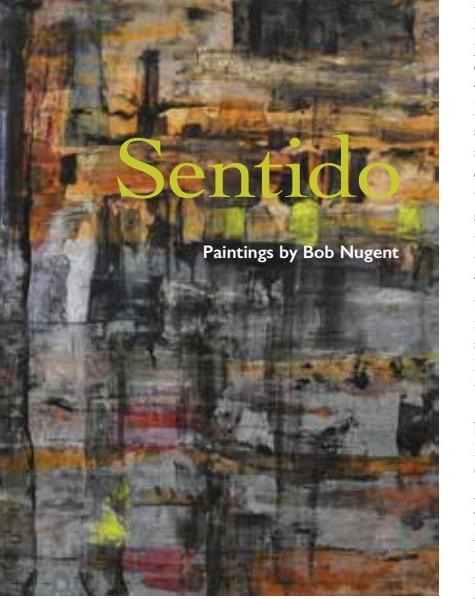
399

## MINAS SERIES

Bob Nugent

I have been documenting the beauty of the flora and fauna of Brazil for over three decades. Over that time I have become increasingly concerned about its continued destruction. I am now addressing the issue head on.

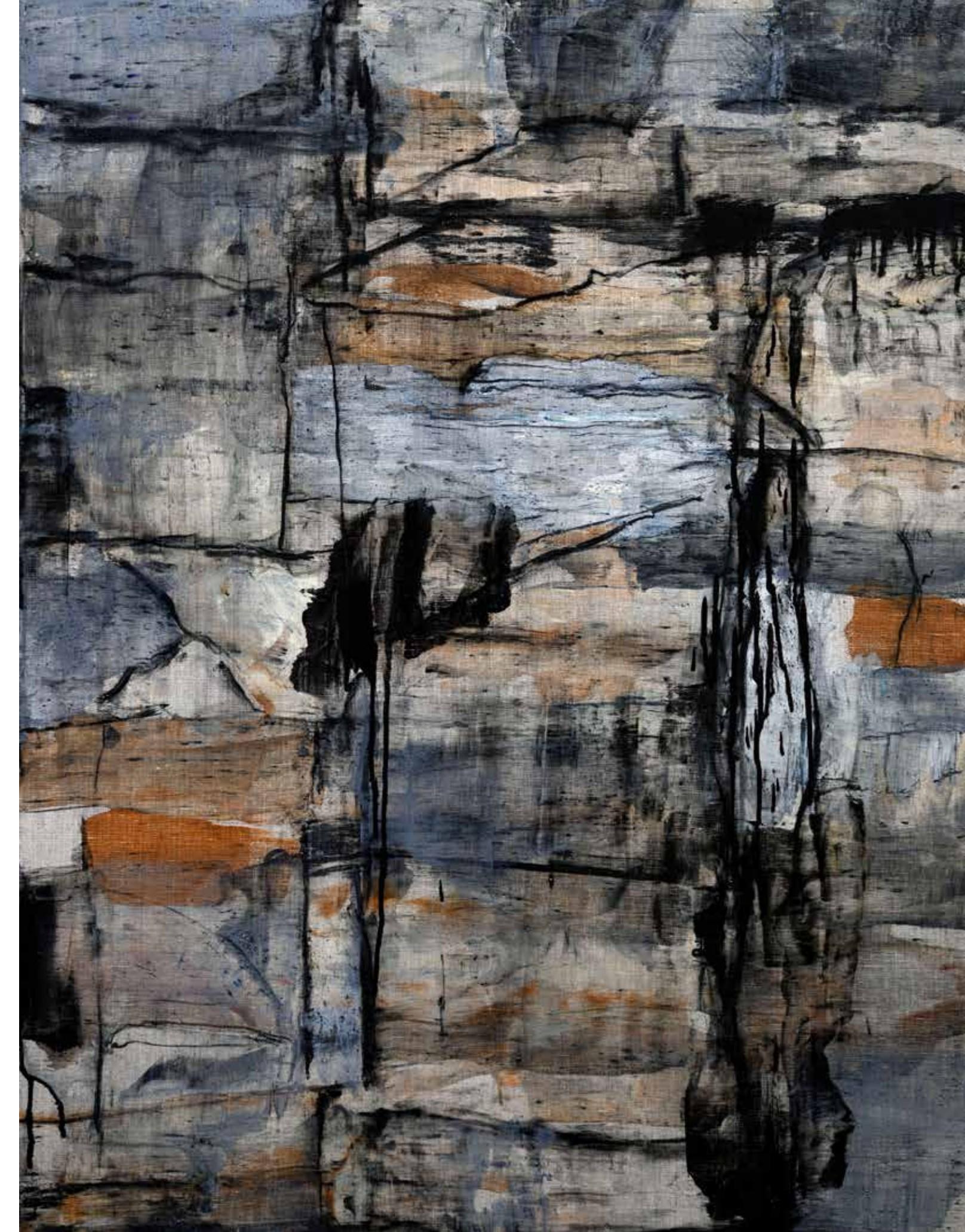
Minas #3 is one in a series of paintings about the mines in Minas Gerais, Brazil. These mines strip the earth of minerals while toxic iron ore tailings are held in earthen reservoirs, polluting rivers and devastating the environment for indigenous communities in the surrounding areas. When a dam in Mariana, Brazil failed in 2015, it sent sixty million cubic meters of iron waste into the Doce River, polluting the river and creating water shortages for the inhabitants along its flow. This work and other paintings about the Amazon River, the Amazon River Basin and other parts of Brazil will be on exhibit at Galeria Dan, São Paulo, Brazil in the Summer of 2021. Other works by Nugent will be featured in the Extraction exhibition *Fire and Ice* at the Cummings Art Center in New London, CT in the Fall of 2021.



Announcing the new publication:  
**Sentido - Paintings by Bob Nugent**  
limited edition hardcover book  
160 pages  
\$38 retail  
Published by Fine Arts Press  
  
Order copies at: [www.fineartspress.com](http://www.fineartspress.com)  
or call 925-303-2860

Bob Nugent first became interested in the indigenous peoples and rain forests of Brazil during a seminal visit to São Paulo in 1984. Here, among the rain forests and Amazonian vistas, the artist found the raw vitality of nature, sometimes in its undisturbed fullness, and sometimes as impacted by the incursions of man. Over the subsequent 36 years he would return again and again to the region to continue his research and study the flora and fauna of the Amazon Region and other parts of the country.  
Already, Nugent's art was being recognized and praised. In 1977 he received a Louis Comfort Tiffany Foundation Artist Fellowship, and one year later a National Endowment for the Arts Individual Fellowship. But what would follow after his initial visit to Brazil was a succession of awards and recognitions for his work in portraying the meld of Amazonian life with the abstracted emotionality of our "civilized" response to it. A Fulbright grant, California Arts Council Artist Fellowship, U.S. State Department Cultural Exchange Grant, and others enabled him to continue what would become a lifelong mission of depicting this world and its transformation before our very eyes.

PRESTON METCALF



Bob Nugent, Minas #3, 2019,  
Oil on linen, 40 by 30 inches



Above: Paccarik Orue, Tajo Raul Rojas, El Muqui series, 2013, archival pigment print



Paccarik Orue, Niños jugando en Champamarca, El Muqui series, 2013, archival pigment print

## CERRO DE PASCO

Paccarik Orue

Cerro de Pasco is a historical city of 80,000 people in the Peruvian Andes, situated on top of one of the biggest sources of income for the Peruvian government: mineral deposits. Throughout the years, each mining company that has been operating the open-pit mine has left its own mess behind; tailings in very close proximity to densely populated areas which are making children sick with very high levels of lead in their bloodstream, killing lakes and livestock, contaminating water supplies and polluting the air. Cerro de Pasco is on the brink of an environmental disaster.

The people of Cerro de Pasco are very proud of their culture and their contribution to Peru's economy. Their wish is not to shut down the mine but that it operates responsibly towards the community and the environment.

The title El Muqui comes from a folkloric character in the Andean mines who is highly respected, even feared, by miners, and has a strong moral code. Popular tales talk about how he is aware of the miners' desires and actions, but playful with children. El Muqui is the center of many of the celebrations and traditions in Cerro de Pasco. With this project I want to celebrate the inhabitants of Cerro de Pasco and give them a voice that they struggle to find and to save the memory of a place whose existence as we know it is threatened.



Paccarik Orue, *Ex-Laguna Quilacocha # 1*, El Muqui series, 2012, archival pigment print



Paccarik Orue, *Niños con caballo en la Ex-Laguna Quilacocha*, El Muqui series, 2013, archival pigment print



Paccarik Orue, *Viviendas y desmonte*, El Muqui series, 2013, archival pigment print



Paccarik Orue, *Campos deportivos, viviendas, desmonte y aguas ácidas*, El Muqui series, 2019, archival pigment print



Daniela Rivera, *Andes Inverted*, 2017, Museum of Fine Arts, Boston, MA, oil and soil on board, wood structure, 25 by 9 by 8 feet



Daniela Rivera, *Grey Copper*, 2017, Museum of Fine Arts, Boston, MA, Tilted wall, 8-channel sound installation, copper point drawing on wall, 25 by 37 by 6 feet

Daniela Rivera's museum installations often focus on uncanny spatial and material dislocations. Breaking from the traditional mold of painting, she creates immersive experiences that draw from her personal history. Her 2015 Traveling Fellowship from the School of the Museum of Fine Arts at Tufts University inspired this ambitious transformation of Gallery 268 with materials, images, and sounds gathered from a landmark in her home country: Chile's Chuquicamata copper mine.

Like an inversion of the naturally soaring Andes, Chile's massive copper mines are machine-shaped canyons, a symbol of national pride and a driver of the Chilean economy, yet at a cost. Inhabited for generations, an employee town at Chuquicamata's edge provided a world-class hospital, schools, theaters, sports fields, and homes for over 30,000 people. By 2008, new mining methods and increasing pollution forced the community to relocate; since evacuated, expanded digging has buried the site.

*Andes Inverted* aims to explore the mine's disruptive impacts—at once environmental, political, cultural, and psychological—and evokes the paradox faced by Chuquicamata miners, many of whom described the jobs and joy provided by the same mine that consumed their homes, memories, and landscape. Rivera explains the miners' situation is not black-and-white but grey: "Their labor is both productive and destructive, the self-sabotage is the complexity of the place."

—“Daniela Rivera: The Andes Inverted,”  
Exhibition Description, Boston Museum of Fine Arts



Barbara Boissevain, Cement Factory VII, 2019, archival inkjet print



Barbara Boissevain, Extraction X, 2019, archival inkjet print



Barbara Boissevain, Extraction II, 2019, archival inkjet print



Barbara Boissevain, Salt Pond Grid I, 2019, archival inkjet print

## LICHEN SONG

Arthur Sze

—Snow in the air you've seen a crust on the ceiling wood and never considered how I gather moisture when you step out of the shower you don't care that I respire as you breathe for years you've washed your face gazed in the mirror shaved combed your hair rushed out while I who may grow an inch in a thousand years catch the tingling sunlight you don't understand how I can dive to a temperature of liquefied gas and warm back up absorb water start growing again without a scar I can float numb in space be hit with cosmic rays then return to earth and warm out of my sleep to respire again without a hiccup you come and go while I stay gripped to pine and the sugar of existence runs through you runs through me you sliver if you just go go go if you slowed you could discover that mosquitoes bat their wings six hundred times a second and before they mate synchronize their wings you could feel how they flicker with desire I am flinging your words and if you absorb not blot my song you could learn you are not alone in pain and grief though you've instilled pain and grief you can urge the dare and thrill of bliss if and when you stop to look at a rock at a fence post but you cough only look yes look at me now because you are blink about to leave—

## SALT SONG

Arthur Sze

Zunis make shrines on the way to a lake where I emerge and Miwoks gather me out of pools along the Pacific the cheetah thirsts for me and when you sprinkle me on rib eye you have no idea how I balance silence with thunder in crystal you dream of butterfly hunting in Madagascar spelunking through caves echoing with dripping stalactites and you don't see how I yearn to shimmer an orange aurora against flame look at me in your hand in Egypt I scrubbed the bodies of kings and queens in Pakistan I zigzag upward through twenty-six miles of tunnels before drawing my first breath in sunlight if you heat a kiln to 2380 degrees and scatter me inside I vaporize and bond with clay in this unseen moment a potter prays because my pattern is out of his hands and when I touch your lips you salivate and when I dissolve on your tongue your hair rises ozone unlocks a single stroke of lightning sizzles to earth.



Rachelle Reichert, *Salt Circle*, 2018, San Francisco Bay Salt, resin, wood, and steel, 48 by 48 inches



Rachelle Reichert, *Salar 4*, 2019, graphite on paper, 9 by 11 inches



Rachelle Reichert, *Salar 1*, 2019, graphite on paper, 7 by 7 inches



Hikmet Sidney Loe, Great Salt Lake Extractions, 2017, pigment on aluminum

## GREAT SALT LAKE EXTRACtIONS

Hikmet Sidney Loe

[WWW.HIKMETSIDNEYLOE.COM](http://WWW.HIKMETSIDNEYLOE.COM)

These images were taken while flying over the west side of Great Salt Lake in March 2017, indicating both the radical beauty of the lake and pointing to a body of water that has undergone extraordinary change due to human use, intervention, and extraction [1].

My interest in capturing the lake through aerial photography began through the introduction to artist David Maisel's photographic series of the Great Salt Lake, Terminal Mirage, which includes images from "zones of mineral evaporation ponds and

macabre industrial pollution covering some 40,000 acres along the shores of the lake [2]." Maisel's images are powerful in their complexity, formal beauty, and mystery (he never discloses where the images originate around the lake). In turn, we are both influenced by artist Robert Smithson, who gave entrée to a new view of Great Salt Lake, not as a setting of idyllic scenes and picturesque views, but—as he indicated when he wrote of his earthwork, Spiral Jetty (1970) of a region strewn with "incoherent structures. This site gave evidence of man-made systems mired in abandoned hopes [3]."

Extraction of the lake's resources has taken place for thousands of years, as "the area was probably initially occupied about 10,000 years ago by Paleo-Indians who relied on a mix of big-game hunting and collecting of lake margin resources [4]."



Hikmet Sidney Loe, Great Salt Lake Extractions, 2017, pigment on aluminum

Native Americans were often cited by Euro-American explorers in nineteenth century expedition documents as investigations of the lake led to populations settling around its Eastern shores. Mormon pioneers choose the lake's valley to call home in 1847, considering the rich salt content of the lake as one of many positive attributes of their region. Salt extraction led to self-sufficiency and eventually economic development for the settlers, who used and exported this vital mineral in abundance.

By 2017, water use (personal, commercial, and agricultural) and mineral extraction had reduced the lake to half its size from 1847—from an average of 4,200 feet above sea level to approximately 4,195 feet. Water use, and misuse, are a way of life in a state that anticipates "the region's rapid growth, which state analysts believe could push Utah's population from 3.1 million today to 5.1 million by 2040 [5]."

Multiple industries populate the lake, exporting extracted minerals such as salt, magnesium, and potassium; it was reported in 2016 that U.S. Magnesium provided fourteen percent of the world's supply of this mineral [6]. Along with recreation and other businesses, mineral extraction and sales bring in \$1.32 billion dollars annually to the state [7]. Mineral extraction has contributed to lowered lake levels, and in recent years, those of us living on the edges of

the lake have learned that human-created water levels are contributing to increased air pollution along the Wasatch Front, adversely impacting human health. The Wasatch Front's many ski resorts are also impacted by lower lake levels: mountain snow is created, in part, through "lake effect snow," so if the quality of the water and lake levels decreases, that impact cycles to the snow in the mountains [8].

Our ecosystem is complex and all-encompassing: lake extractions, as noted, have adverse regional effects on human, avian, and wildlife populations. So, while the images I captured in 2017 may be aesthetically interesting, they illustrate a lake that looks radically different than it did ten years previously.

It is now 2020, and I continue to document Great Salt Lake both aerially and on the ground. Those of us who live on the lake's shores have not fully abandoned hopes of a healthy lake or ecosystem, but we have a lot of work to do to establish balanced systems to regain healthy ecosystems.

### NOTES:

[1] For comprehensive information on Great Salt Lake, see FRIENDS of Great Salt Lake's website: [www.fogsl.org](http://www.fogsl.org)  
[2] David Maisel, Terminal Mirage Project Statement. Accessed January 12, 2020: <https://davidmaisel.com/works/terminal-mirage/#1>.

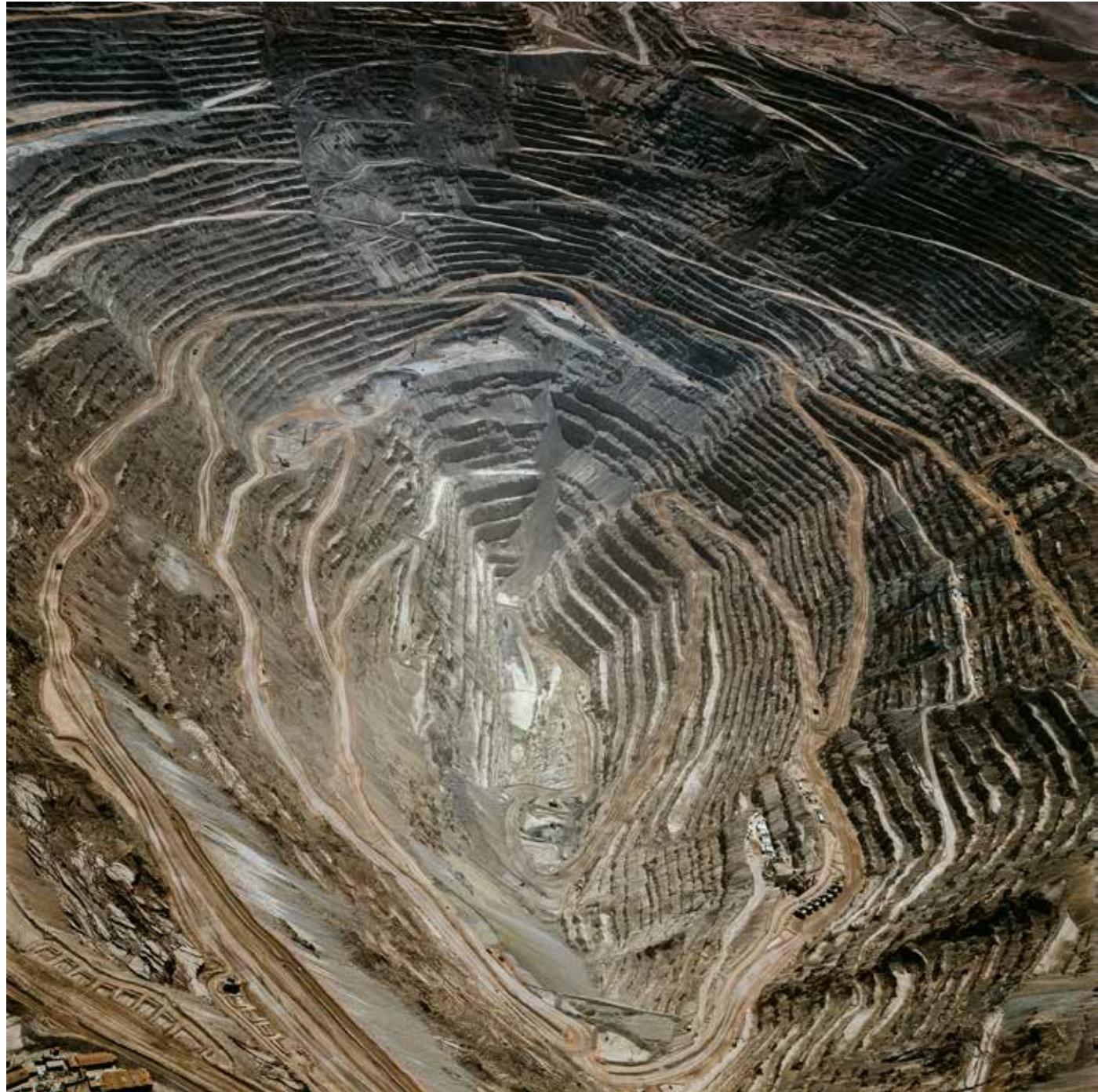
[3] Robert Smithson, "The Spiral Jetty," in Arts of the Environment, ed. Gyorgy Kepes. Vision + Value Series. (New York: George Braziller, 1972), 223.

[4] David B. Madsen, "The Human Prehistory of the Great Salt Lake Region," in Great Salt Lake: A Scientific, Historical and Economic Overview, ed. J. Wallace Gwynn (Salt Lake City: Utah Geological and Mineral Survey, 1980): 19.

[5] Emma Penrod, "Scientists say the Great Salt Lake is disappearing, but could Utah residents save it?" The Salt Lake Tribune, December 16, 2017, updated May 1, 2019.

[6] Leia Larsen, "Miner extraction on Great Salt Lake has local, national and global impact," Standard-Examiner, May 1, 2016.  
[7] "Saline Lakes in Dire Situation Worldwide, including Great Salt Lake." Utah State Today, Utah State University, October 23, 2017.

[8] Chris Miller, "Great Salt Lake levels at 50-year low, industry, wildlife impacted," KUTV.COM, July 22, 2016.



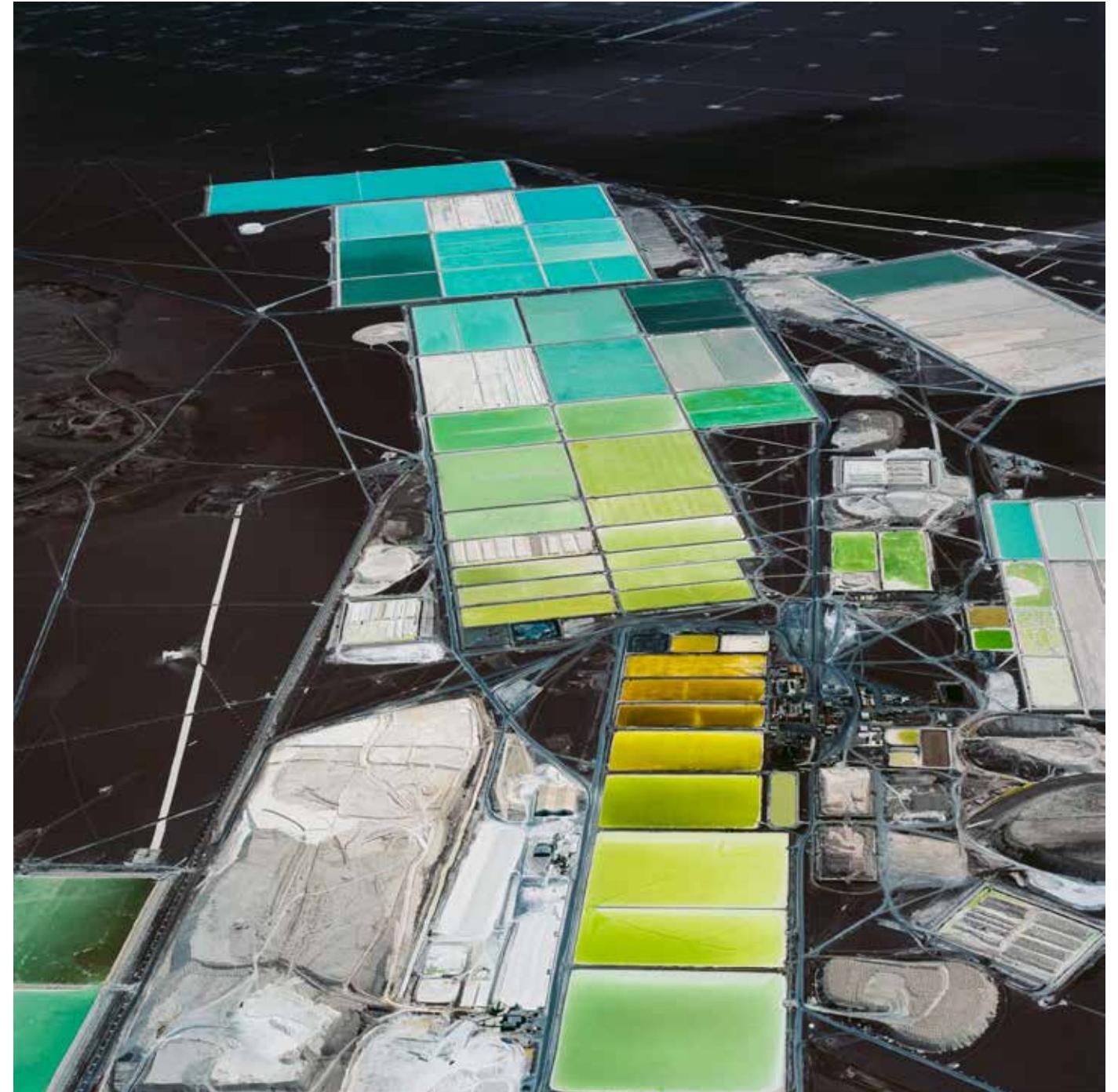
David Maisel, *Desolation Desert: Copper Mine 1, Chuquicamata, Atacama Desert, Chile*, 2018, Archival pigment print, 48 by 48 inches.  
Courtesy Haines Gallery, San Francisco and Edwynn Houk Gallery, NY



David Maisel, *The Mining Project, Butte MT9*, 1989, Archival pigment print, 48 by 48 inches. Courtesy Haines Gallery, San Francisco and Edwynn Houk Gallery, NY



David Maisel, *Desolation Desert: Abandoned Nitrate Mining Town 1*, Pedro de Valdiva, Atacama Desert, Chile, 2018, Archival pigment print, 48 by 48 inches. Courtesy Haines Gallery, San Francisco and Edwynn Houk Gallery, NY



David Maisel, *Desolation Desert: Lithium Extraction 1*, Salar de Atacama, Chile, 2018, Archival pigment print, 48 by 48 inches. Courtesy Haines Gallery, San Francisco and Edwynn Houk Gallery, NY



Michael Light, Pentagonal Lithium Evaporation Pond and Chemetall Foote Plant At Right, Silverpeak, Nevada, 2006



Michael Light, Chemetall Foote Lithium Mine Groundwater Evaporation Ponds, Clayton Valley, Nevada, 2006

## OLD FAITHFUL

David E. Thomas

From all over  
the planet  
they wheel  
narrow roads  
to arrive  
at this junction  
bigger  
and busier  
than a Wal-Mart  
parking lot  
and cluster  
in a wide loose  
circle  
around a mudflat  
oozing  
a plume  
of steam  
drifting close  
to the ground  
an air of casual  
expectation  
builds  
with the minor  
eruption  
of attendant  
steam  
and then rewarded  
as the dormant  
plume  
rises  
with sudden  
liquid  
force  
spraying a white  
arc  
in the noon sky

then there's  
a sigh  
of satisfaction  
as the multitude  
throng  
away in every  
direction  
John Colter's  
bloody  
barefoot  
tracks  
long gone  
in a diesel  
wind.

15 August 2006  
Gardiner, Montana

## FLIGHT FROM PHOENIX

David E. Thomas

Gradually if not  
slowly  
buildings and grids  
lose  
definition  
beneath the rising  
wing  
landscape  
becomes topographical  
as the silver wedge  
catches  
noon sun  
a week in the desert  
falling behind me  
as I fly north  
on the promise  
of spring  
red hued mountains  
The Superstitions  
The Four Peaks  
Camelback  
old friends  
hiked me through  
cactus  
greasewood  
paloverde and birds  
rare to my eye  
dust storms and museum exhibits  
then quiet nights  
home by the tv  
ah here's  
The Grand Canyon  
what else could  
this monumental  
gorge  
possibly be?  
a vast gnarly  
rift

even from  
high  
in the air  
and this great hole  
with its measured  
terraces  
can only be an open  
pit mine  
yielding precious metals  
that give shape  
to mathematics holding this  
machine aloft  
snow  
begins to appear  
sparse then thick  
then isolated  
by bare brown

pulp fiction  
consumes the miles  
then clouds  
cover everything but Ranier's  
massive white cone

as we begin  
to descend  
and gradually  
if not slowly  
grids  
and buildings  
assume  
definition

again  
and we come  
to a stop  
at vast Sea-Tac  
humming  
with electricity  
and fossil fuel  
and all of us  
going to  
and fro.

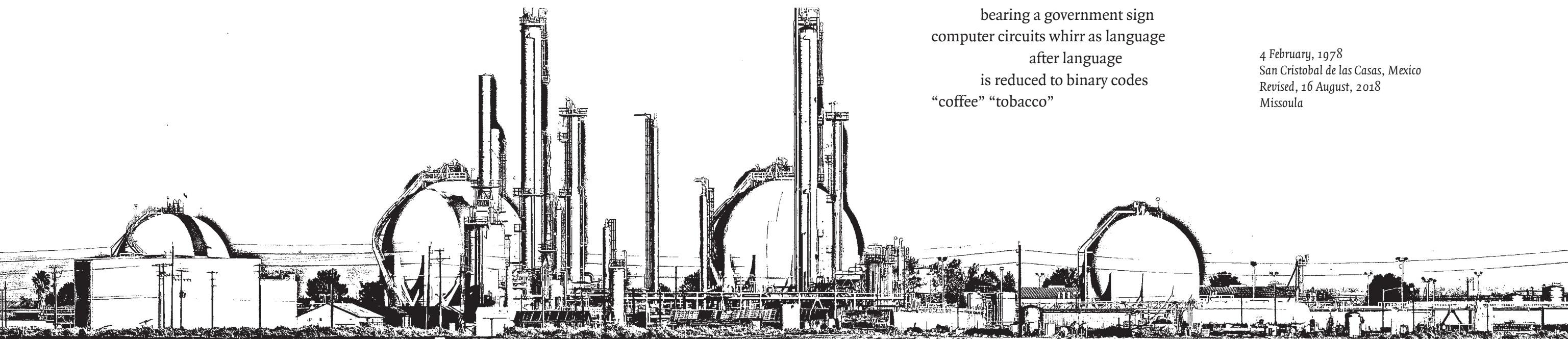
(for Bob and Colleen and Erin)

## BRINK OF THE UPPER FALLS OF THE YELLOWSTONE

David E. Thomas

Mist off  
the roiling  
boiling water  
catches  
mid-afternoon  
sun  
at a leprechaun  
angle  
and rainbows it  
downstream  
while eyes  
from all over  
the world  
grab  
a moment  
of this wild  
majesty.

15 August, 2006  
Yellowstone Park



## INDUSTRIAL MEDITATION

David E. Thomas

A dusty grove of Indians  
and campesinos  
waits for a truck ride:  
  
deep in the concrete  
steel glass cocoon  
motor homes  
slick as beetles  
proceed nose to ass along  
asphalt and concrete  
laid out according to viral  
suggestion  
vibrating like Mayan  
glyphs  
in a child's dream  
blind old Arizona cowboy tells  
stories of 666  
by a fruitpicker's  
fire  
entropic algebras of cultural digestion  
yawn at daybreak  
in a high mountain  
village  
from a four wheel drive  
bearing a government sign  
computer circuits whirr as language  
after language  
is reduced to binary codes  
“coffee” “tobacco”

“coal” and “oil”  
spells  
the international countinghouse  
culture  
myths and handwoven designs  
carrying centuries of human breath  
and smell  
fade into dacron polyester  
automated factories shuffle  
between jungle and dawn  
a charcoal burner  
plies his dying  
trade  
in a volcano's sleeping  
fire  
and on the streets of a Mexican town  
a freckle faced  
Indian woman  
is captured  
by a loudspeaker her child  
slung in a blanket  
on her back  
a flickering unfocused bone  
picked vulture clean  
windy colors sprouting new feathers  
of life and death.

4 February, 1978  
San Cristobal de las Casas, Mexico  
Revised, 16 August, 2018  
Missoula

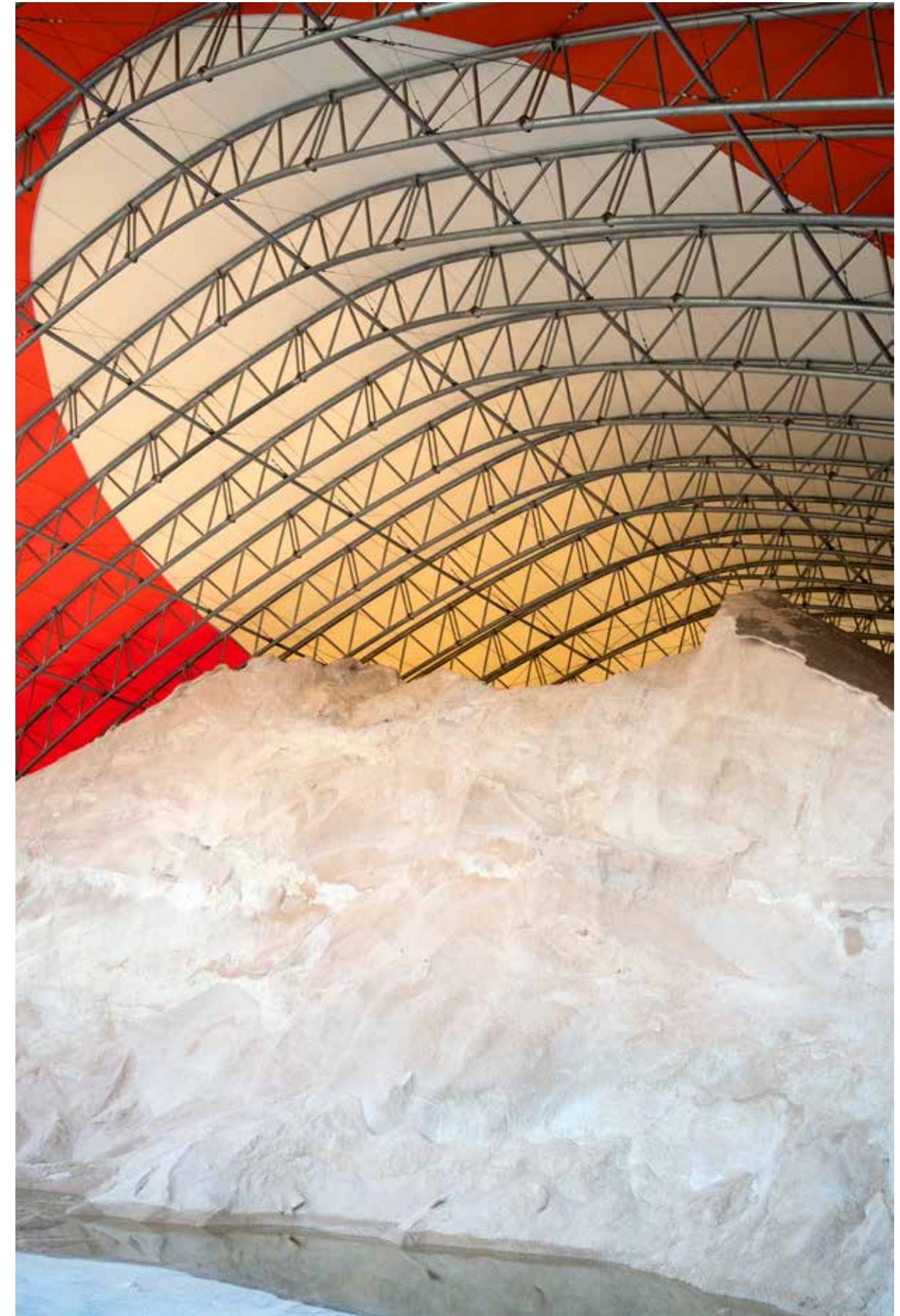
## NOW MORE NEAR

Em Joseph + Galen Pardee

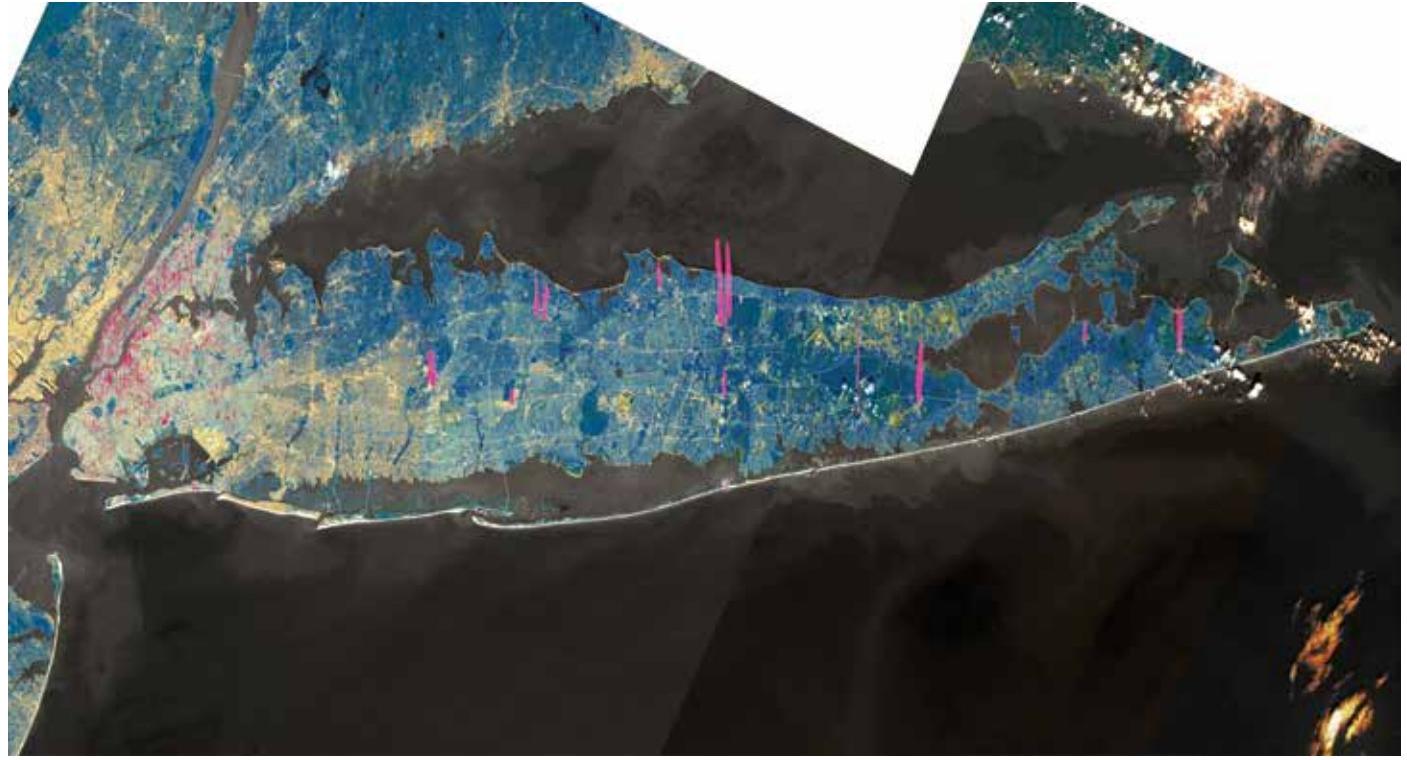
Sand is the lifeblood of New York City. Without sand, concrete cannot be produced; and without concrete, the city's construction industry would grind to a halt. Without construction, New York's powerful real estate interests would crumble. While new buildings throughout the five boroughs of New York attest to the power of development to change the character of the city almost at will, the concrete which frames these developments is produced in sites that are locked in place by even stronger forces: production logistics, land value, cultural zoning and capital exchange.

Proximity—and by extension, time—is the governing factor of concrete construction. Suffolk County, Long Island is a major location of sand mines, delivering aggregate to concrete plants in Brooklyn, Queens, and the Bronx's industrial heartlands. Sand's high density means inefficient and expensive transportation over long distances. Once mixed with cement and water to form concrete, concrete mixing trucks have ninety minutes to reach their destination before the material in their mixing drums cures and hardens, rendering the truck unusable and cargo worthless. To allow the industry to remain a buffered yet proximal service to the New York real estate apparatus, a belt of concrete plants surrounds Manhattan, suspended by chemical anchors of curing sand, water, and Portland cement.

How do we begin to understand the triangulations between sand, concrete, and the limitations of landscape as represented by the sequestered value held within New York City's concrete plants? With facilities in Gowanus and Greenpoint increasingly surrounded by new residential buildings, how can we assess the human impact on these plants, and what they mean for life in these areas? What is their environmental toll and how can we measure the expanse of these material, temporal, and logistical underpinnings in New York City?



Em Joseph and Galen Pardee, *Now More Near #4*, 2019–2021, video, sculpture & installation



Em Joseph and Galen Pardee, *New York Sand and Concrete*, 2019–2021, video, sculpture & installation



Em Joseph and Galen Pardee, *Now More Near #6*, 2019–2021, video, sculpture & installation



Em Joseph and Galen Pardee, *Now More Near #1*, 2019–2021, video, sculpture & installation



Em Joseph and Galen Pardee, *Now More Near #5*, 2019–2021, video, sculpture & installation

# BEAUTY IN THE TWILIGHT OF THE ANTHROPOCENE

Aaron Parrett

Our oldest and most venerated Western myths begin with earthly extraction: both Yahweh and Prometheus breathe life into handfuls of mud, and thus clay clawed from the earth is made into human form. In Genesis, God goes on to extract a rib from Adam in order to create Woman, a reversal of the actual order of things so inherently blasphemous that it cannot possibly be a metaphor for anything other than the brute transgression of extraction itself and the limitless ironies that spool out in consequence.

Life itself, for example, goes on to perform a relentless, repetitive play of extraction and decay, an ouroboros in which the mineral world rises up to ingest itself over and over again. That rib mined from the body of Adam is the bone flung skyward by an ape in *2001: A Space Odyssey* to evolve in the blink of an eye into something more complex, more interesting, something sleeker and more feminine, a uterine spacecraft ready to return humanity to the stars from which we originated, as explained in both Plato's *Timaeus* and the most modern physical science books.

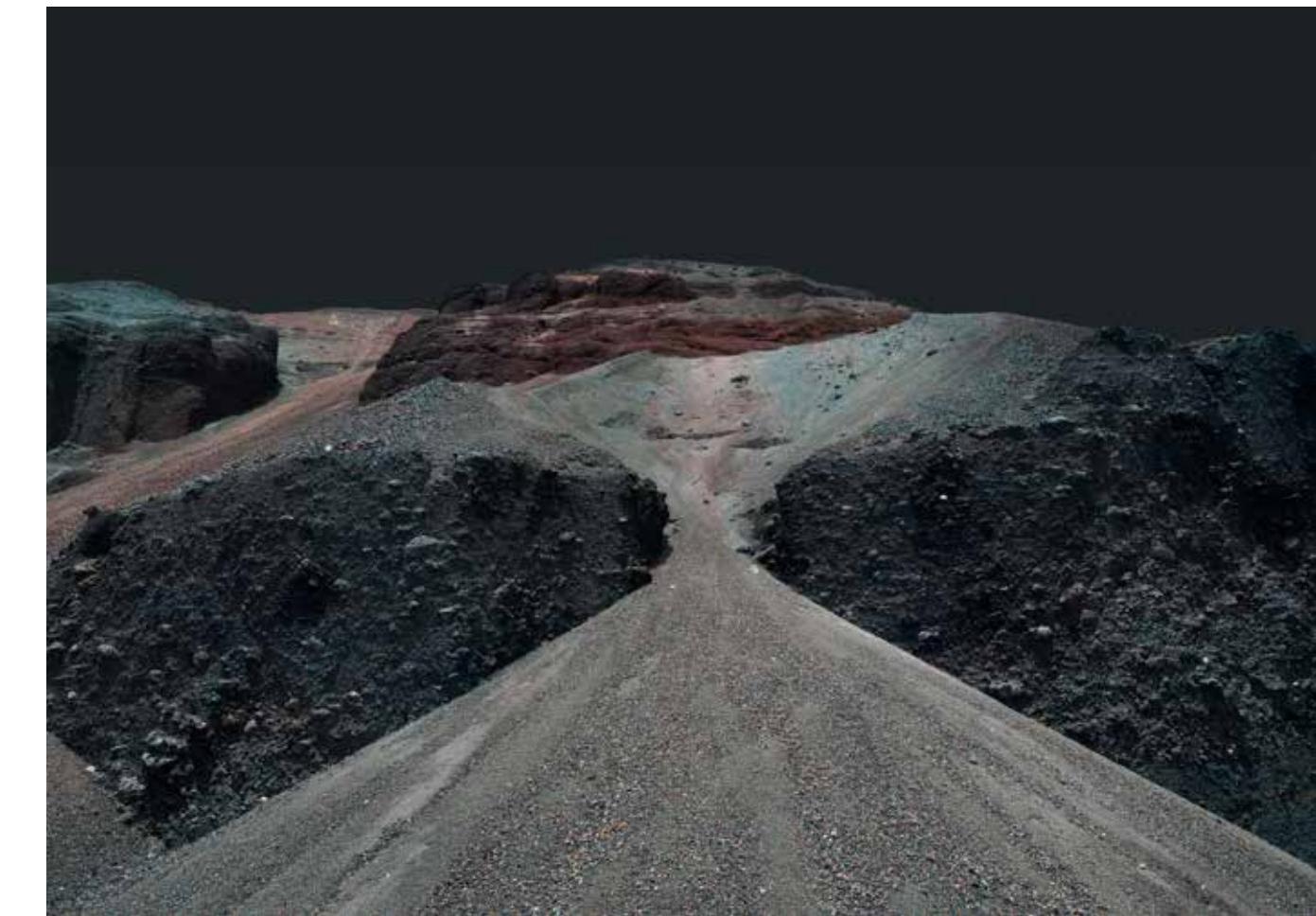
The root of the word "extraction" is Latin *trahere*, to drag, the past participle of which is *tractus*—having been dragged—so that *ex+traction* refers to something literally "having been dragged out of" something. It's a word that envisions the stark labor of mining, to be sure, but also describes the way we often arrive at an uncomfortable truth. A recalcitrant witness must have the truth "dragged out of" him, akin to the way one drags grappling hooks through a river to recover a body, but also the way one drags the business end of a steam shovel through hard rock ore to get copper for bullet tips and shell casings, or to get coal to burn for melting copper.

By the time it gets to English, "extraction" has been euphemized to a clinical gloss of its original

savagery. The word has become neutral and detached in our mouths, its Latinity obscuring its transgressive origins. Yet that original meaning does endure in the industrial sense: we drag what we want from the earth in the way of natural resources, our machines having become insensate extensions of our hands—hands that once dragged forth coals from the ashes so we could carry the fire, hands that once clawed the earth to get roots for food, and then gold for baubles, and then ore and coal—always in imitation of how our gods clawed at the clay to get the raw material from which to make humans.

But beyond the realm of myth, these are merely evolutionary facts. Chemicals accrete out of the raw elementary matter generated by stars gone supernova, and eventually those chemicals achieve a state in which they actively seek themselves out. We call it the miracle of life, but what is life but a chemical cascade, a series of molecules extracting other molecules from the primordial soup? The key to all this is that certain molecules possess an urge to replicate, to make copies of themselves. There is no better word to describe this miracle than to say that it is beautiful. Elaine Scarry opens her brilliant essay "On Beauty and Being Wrong" with this relevant passage: "What is the felt experience of cognition at the moment one stands in the presence of a beautiful boy or flower or bird? It seems to incite, even require, the act of replication. Wittgenstein says that when the eye sees something beautiful, the hand wants to draw it."

Or, think of it this way: a lost desert traveler whose body is more than fifty percent water, feeling thirsty, slices into a towering cactus to suck out the moisture for survival. Water so constituted finds other water to extract. Given sufficient time and the inexhaustible evolutionary imperative, the metaphor mutates and becomes symbolic: we extract meaning from the universe, seeing signs and wonders in the meaningless array of nature, giving words to things, and pulling from those accumulated words accretions of new meanings for which



Michael Lundgren, *Eroding Cinder*, 2017, Pigment Print, 40 by 56 inches

we must coin new words—a fascinating unspooling of cultural evolution. Long before human beings sank deep shafts to extract coal or metal ores, they searched the skies with caveman eyes and raked the stars for meaning and information. To hear Dawkins and the other proudly incorrigible evolutionary biologists tell it, we are "meat machines," capable of processing both abstract information and other life forms for energy. We extract protein and carbohydrates from the plants and animals we extract from the environment, but we also extract information, which accumulates, but almost always in ways that enhance our ability to extract and accumulate. Meanwhile, the recognition of beauty in this universe impels us to create art—a different version of the same impulse for extraction.

Thinking about ourselves and what we do in this way leads inevitably to science fiction or religion, two things which are, perhaps, different sides of the same coin: a coin we began flipping the moment we emerged from the muck, having mastered the ability to extract oxygen from the atmosphere rather than from seawater. Religion, simply put, is just the idea that there's more going on here than meets the eye and that the mystery itself must be part of what compels us. The so-called "God of the gaps" is a suitable phrase, as far as it goes, except that what we mean by gap is something more like an abyss. God is merely that which remains to be extracted. We heathens simply murmur, "Beautiful."

Science fiction perhaps is not quite the right word for the alternative tendency, which is to imagine the future and to envision what lies beyond the



Chris Ruston, *Fault Lines*, 2019, Indian ink and pen on paper

horizon of our senses, and then use our rational capacity to make it happen. “Fiction” is a placeholder for the vision, “science” is the vehicle that continually brings the imaginary into focus more and more clearly until it becomes real. What is embodied in the phrase “science fiction” slides across the page of history from left to right: fiction leading the way, science fast on its heels, always erasing the abstract vision with concrete reality.

The difference between these two visionary tendencies is that religion approaches the mystery of the future on an individual basis, seeking salvation, while science fiction imagines the future of the race itself, offering survival. Religion offers a presumably private pact with God over the inevitability of death; if science fiction offers anything like salva-

tion, it is something more like a philosophical long view, an acknowledgement of how wondrous it is to be a conscious part of the universe unfolding. If you read very much religion or science fiction, you begin to realize that both of them offer flights away from the world. Each impulse, in its own way, takes a dim view of the world we actually inhabit, seeing the world as a way station along the way to something better, whether heaven or colonization of new planets. In the way that an organism extracts its nourishment from a clam and leaves the shell behind as detritus, it seems human beings have some vague notion that once we have exhausted Earth’s resources, we shall move on to extract them from other planets.

For this reason, neither religion nor science can furnish a convincing argument for why we should rethink extraction. All religions are eventually dominionistic (taking for granted that human beings are the pinnacle of creation and therefore have dominion over the Earth), and so the psychology of extraction is woven into the worldview. Science fiction, which might be thought of as the secular religion of the modern age, is powerless to repudiate extraction because once you’ve erased the line between “organic” and “inorganic” by acknowledging that life is just a kind of stellar evolutionary machinery, extraction becomes woven into biology.

Out of science, an environmentalism often emerges in which we acknowledge our unprecedented power over nature and urge ourselves toward some kind of wise stewardship. Buckminster Fuller’s *Spaceship Earth* essays offer a fine example. Similarly, from the religious side, we often see environmentalism based on the idea that it is our obligation to take care of Creation.

At root, these are both arguments for survival: if we witlessly destroy our earthly habitat, we shall perish, either because God will punish us, or because we will have irredeemably fouled the nest. This line of reasoning presumes that, because we are conscious and have the capacity for reason, we would be irresponsible if we did not take steps to prevent the sort of environmental destruction we presently see threatening us with mass extinction, including the extinction of our own species.

The problem with stewardship arguments, and environmentalism in general, is that the overarching worldview giving rise to them contains the seeds of its own refutation. On the religious side, stewardship is simply refuted by the occult omnipotence of God: everything humans do is all part of God’s plan, including the irresponsible destruction of our own habitat. And if science teaches us that humans are part of nature, then everything we do is natural, including the irresponsible destruction of our own habitat. The survivalist outlook cannot convince

those for whom survival is merely one possible outcome in a larger “plan,” whether devised by God or unfolded through natural evolution. Perhaps—and this is a truth made plain both in the Genesis flood story as well as the paleontological fossil record—we are not meant to survive.

It strikes me that the only way out of the dark woods of this cynicism is to look for a narrow path hidden in a certain philosophical thicket we call aesthetics. I will summarize the aesthetic argument in this way: rather than saying that we should reconsider, and carefully control, our impulses to extract coal and oil and gas and rare earth metals because doing so has created an imminent threat to our survival as a species, we should instead argue, by availing ourselves of all the means we possess for the production of beauty, that we should reconsider, and carefully control, our impulses to extract coal and oil and gas and rare earth metals because doing so is aesthetically untenable. Put even more simply, the mess that extraction processes leave behind is not pleasant to look at or live among. Those processes and their aftermaths deny beauty.

The survival instinct cannot save us. It should be manifestly obvious by now, in fact, that our urge to survive is what has led us to this sublime twilight of the Anthropocene in the first place. From the viewpoint of eternity, whether we survive or flourish does not matter, because the universe is indifferent. If value is to be assigned, it is up to us to assign it, and for value to be meaningful in a way that will transcend the self-defeating mode of survivalism, it must be aesthetic. We must live for beauty, not for survival.

In a way, even the environmentalist argument reduces to an aesthetic argument: the end will not be “pretty,” or “no one wants to see” the oceans rising 200 feet and the attendant havoc that would wreak. My point is that the horror we feel at the prospect of it all vanishing, whether because we burned too much coal or because of a wayward asteroid, is fundamentally an aesthetic horror. It is the horror of knowing that without us to perceive it, the world

and the universe would cease to be beautiful. This too may be a kind of selfish arrogance, but fighting for the endurance of the beautiful is the only convincing course we have left.

Some will object that beauty is nebulous, or that it lies in the eyes of the beholder, which is to say that conceptions of the beautiful are always subjective. And if beauty is subjective, who is to say that the vast destruction of hundreds of square miles of pristine Canadian forest into poisonous holding ponds for Tar Sands oil recovery is not also in some sense “beautiful”?

What if we acknowledge that Beauty is universal, even if, like Justice Potter, we cannot define it, though we know it when we see it? In a sense, since he was writing of obscenity, he inadvertently referred to Beauty itself: after all, isn’t it the case that only because of some innate module in our minds conditioned by 200,000 years of evolution are we able to distinguish the beautiful from the obscene? The extent to which we are willing to let the natural world succumb to the rapacious greed of human impulse is a reflection of our abandonment of objective beauty and the ideal aesthetic object that has always inspired the greatest accomplishments of humankind.

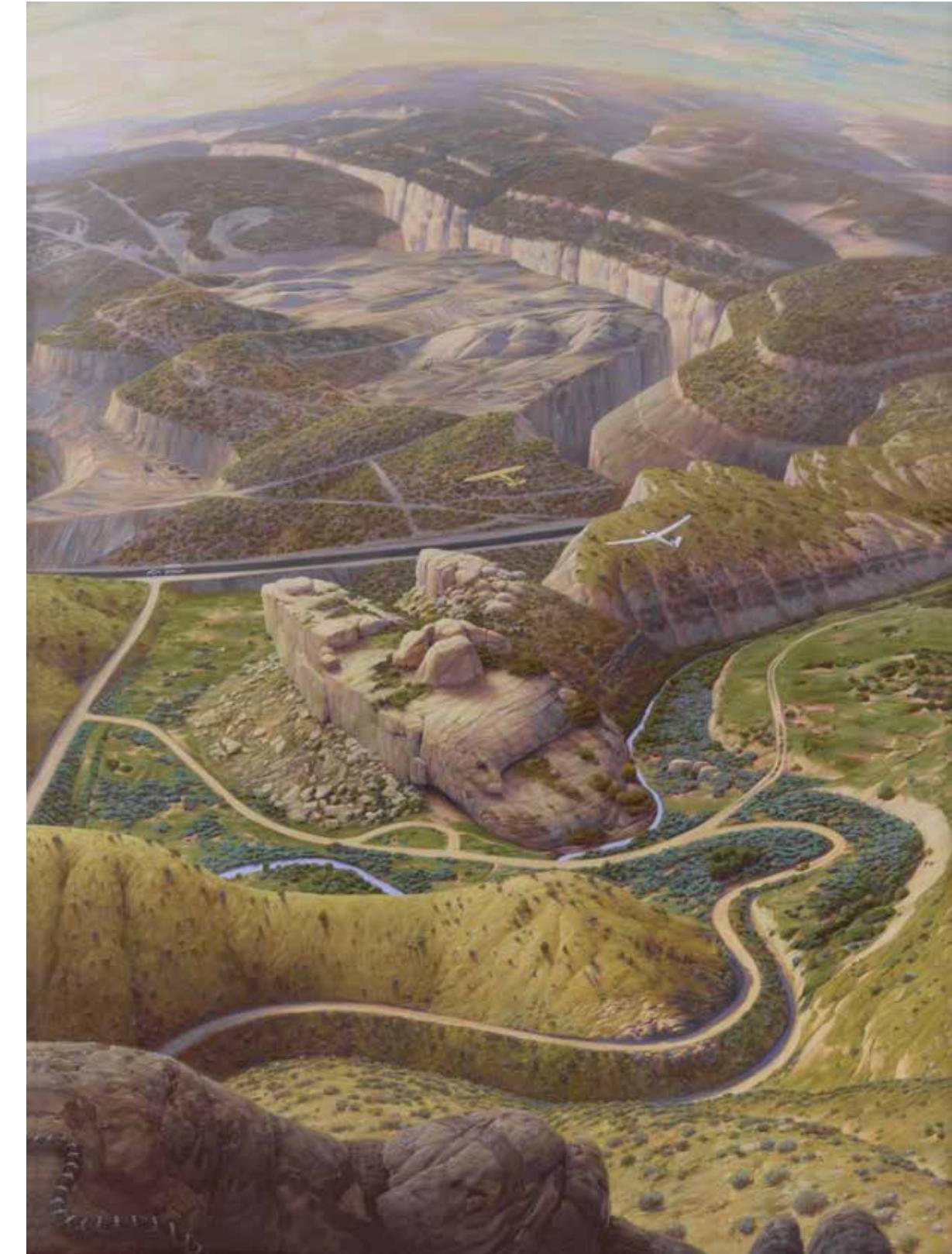
Ugliness is always the residue of a cynical subjectivism, which is what we are up against in the impending twilight of the Anthropocene. We should not go gently into that night.

The evolution of consciousness is intimately bound up with the aesthetic sense and offers us perhaps the only useful tool for thwarting the more rapacious, but natural, impulses. Scarry writes, “The thing perceived, the beautiful object, has conferred on it by the beholder a surfeit of aliveness: even if it is inanimate, it comes to be accorded a fragility and consequent level of protection normally reserved for the animate; if inanimate, like a poem, it may, by being memorized or read aloud to others, thereby be lent the aliveness of the person’s own consciousness.”

It will not do to conceive of the Earth as a spaceship or any other vehicle of survival. Survival mentality contains within its genetic code the instructions for our undoing, analogous to the way in which any normal cell can at any moment go rogue and become cancerous. There is no way out of the twilight of the Anthropocene but to reimagine the world and ourselves in it as an immense Apollo project dedicated to the cultivation of Beauty.

Let this be a manifesto:

All human production must be reorganized to generate ideas and objects that are beautiful, such that we feel a moral imperative to protect and preserve them for their own sake, whether it is the manufacture of copper wire, or the layout of rice fields. We must replace the invisible hand of the marketplace with the all-seeing eye of the Pythagorean God who yearns for the perfect expression of the beautiful. If we are to be caretakers, we must be caretakers of the Beautiful, for nothing else under heaven is worth preserving. We must live for Beauty without succumbing to decadence, understanding in our bones that what we value most is not survival, or security, or satiation, but rather the leisure that each of those affords so that we can contemplate and generate Beauty.



Chuck Forsman, *Snake Meridian*, 1997, oil on canvas, 67 by 48 inches



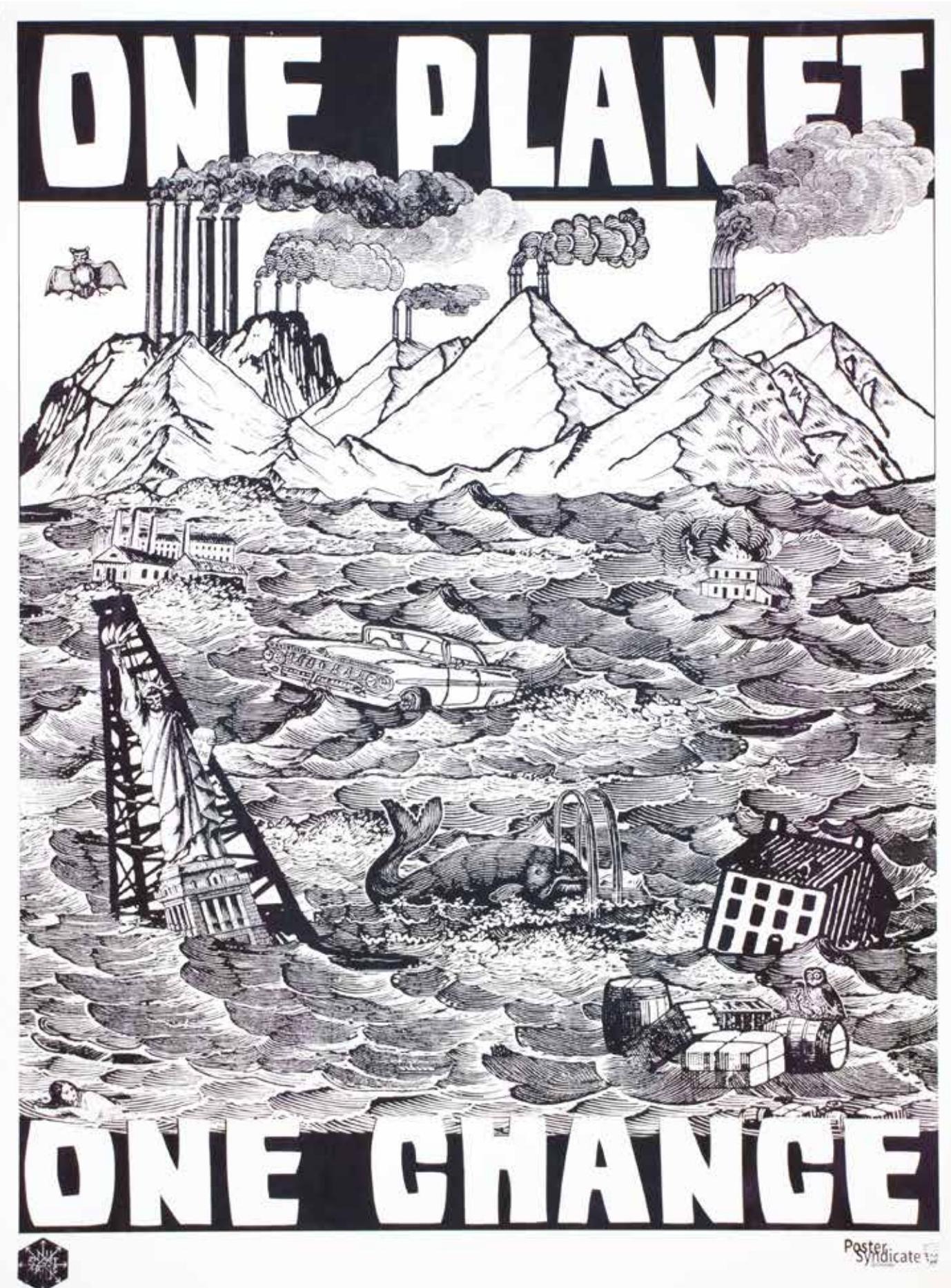
## CLIMATE ACTION POSTERS

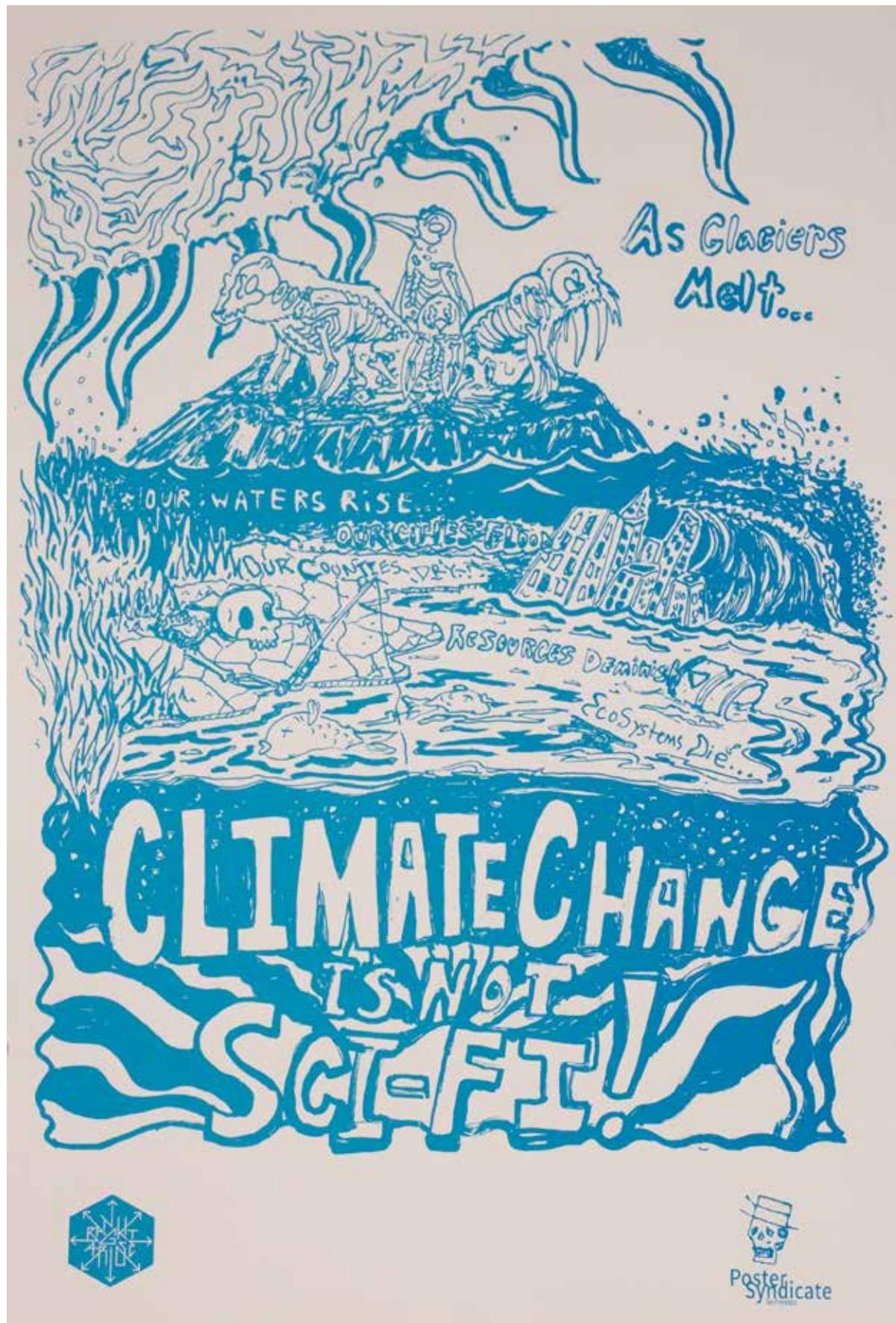
SAN FRANCISCO POSTER SYNDICATE AND BANGKIT ARISE

Art Hazelwood

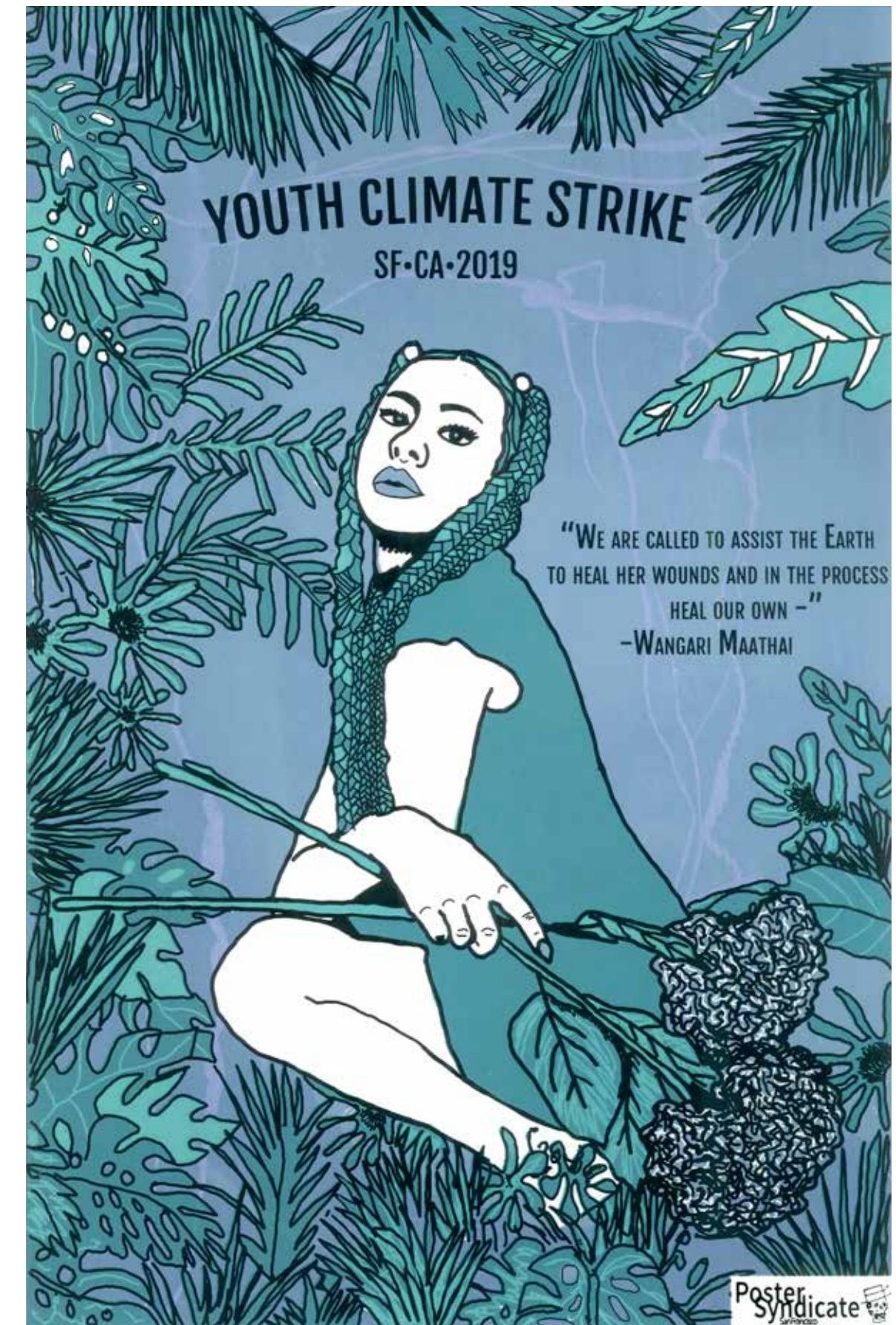
San Francisco Poster Syndicate (SFPS) is a street art collective that prints and freely distributes screenprint posters at political actions. We have participated in multiple climate actions giving graphic support to the activism needed to address climate change. In 2018 SFPS teamed up with Bangkit Arise, a collective of artists from Yogyakarta, Indonesia to print at the march before the Global Climate Action Summit in San Francisco. SFPS has also distributed posters at Youth Climate Strikes in San Francisco in 2019.

Above: Michelle Williams, SEE Our Impact, 2018, San Francisco Poster Syndicate, screenprint; Right: Patrick Piazza, One Planet One Chance, 2018, San Francisco Poster Syndicate, screenprint



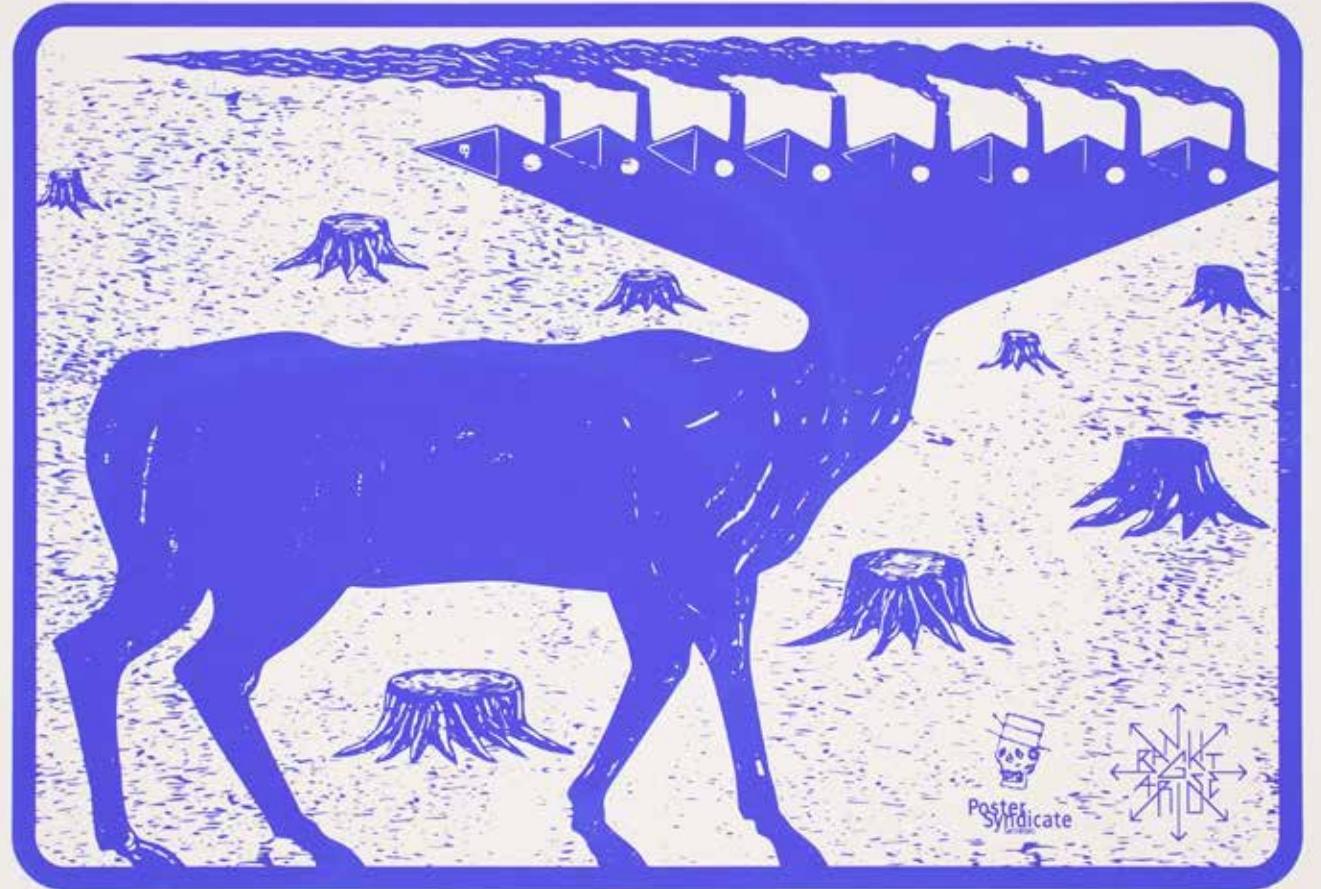


Krista Wright, Climate Change is not Sci-Fi, 2018, San Francisco Poster Syndicate, screenprint



Samantha Companatico, Youth Climate Strike, 2019, San Francisco Poster Syndicate, screenprint

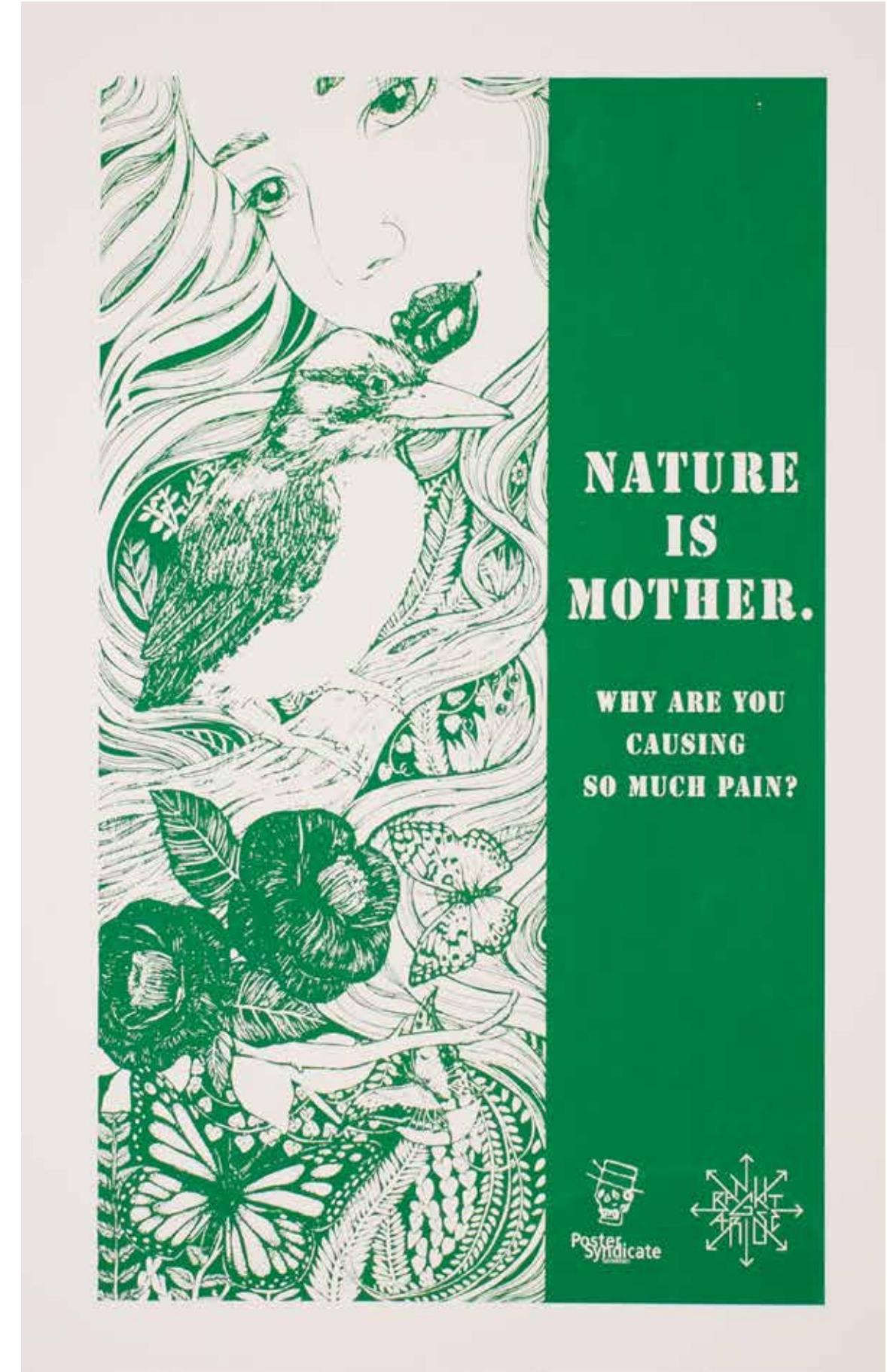
**GREED = GLOBAL WARMING**



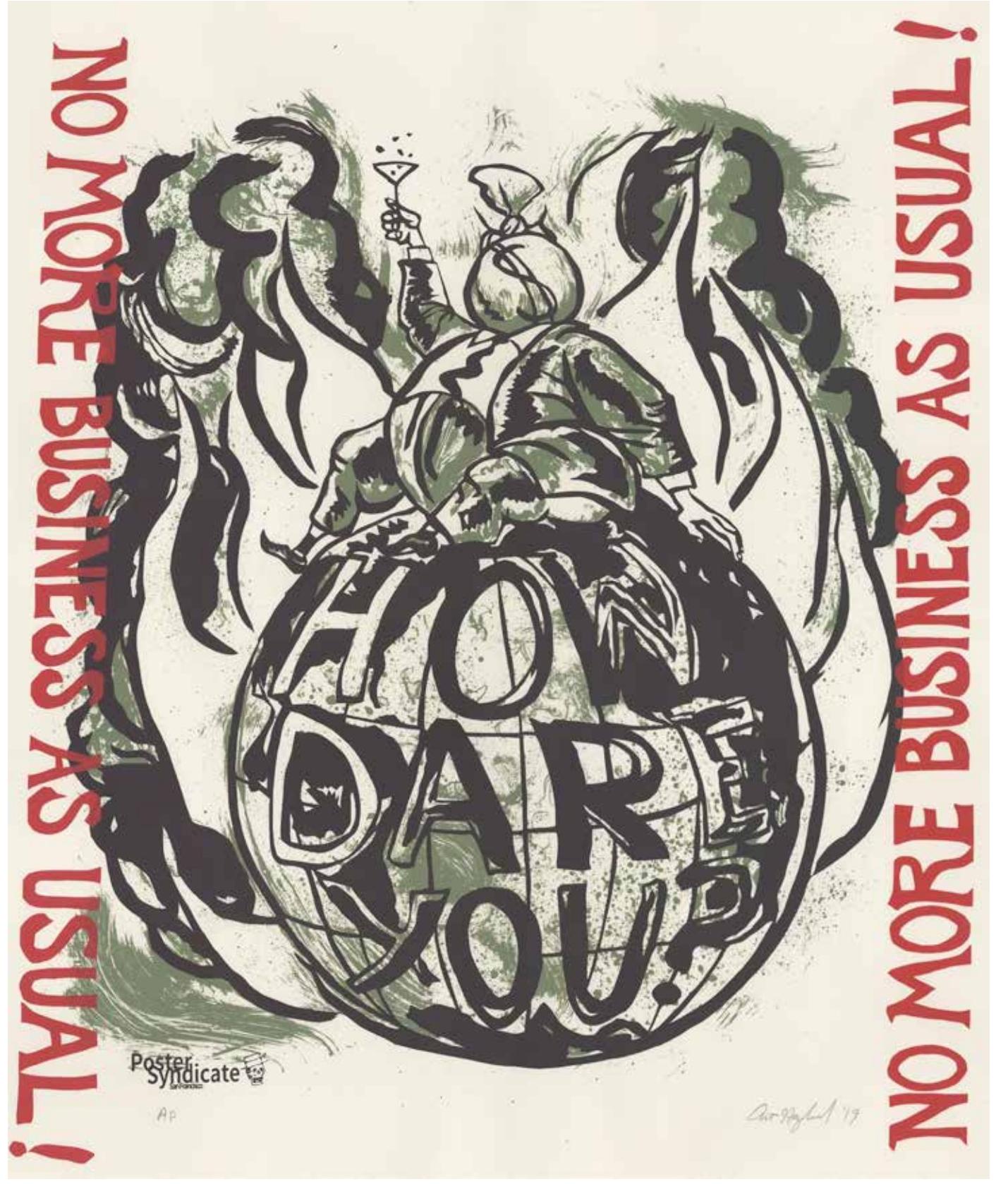
Ucup, Greed=Global Warming, 2018, Bangkit Arise, screenprint

**NATURE  
IS  
MOTHER.**

**WHY ARE YOU  
CAUSING  
SO MUCH PAIN?**



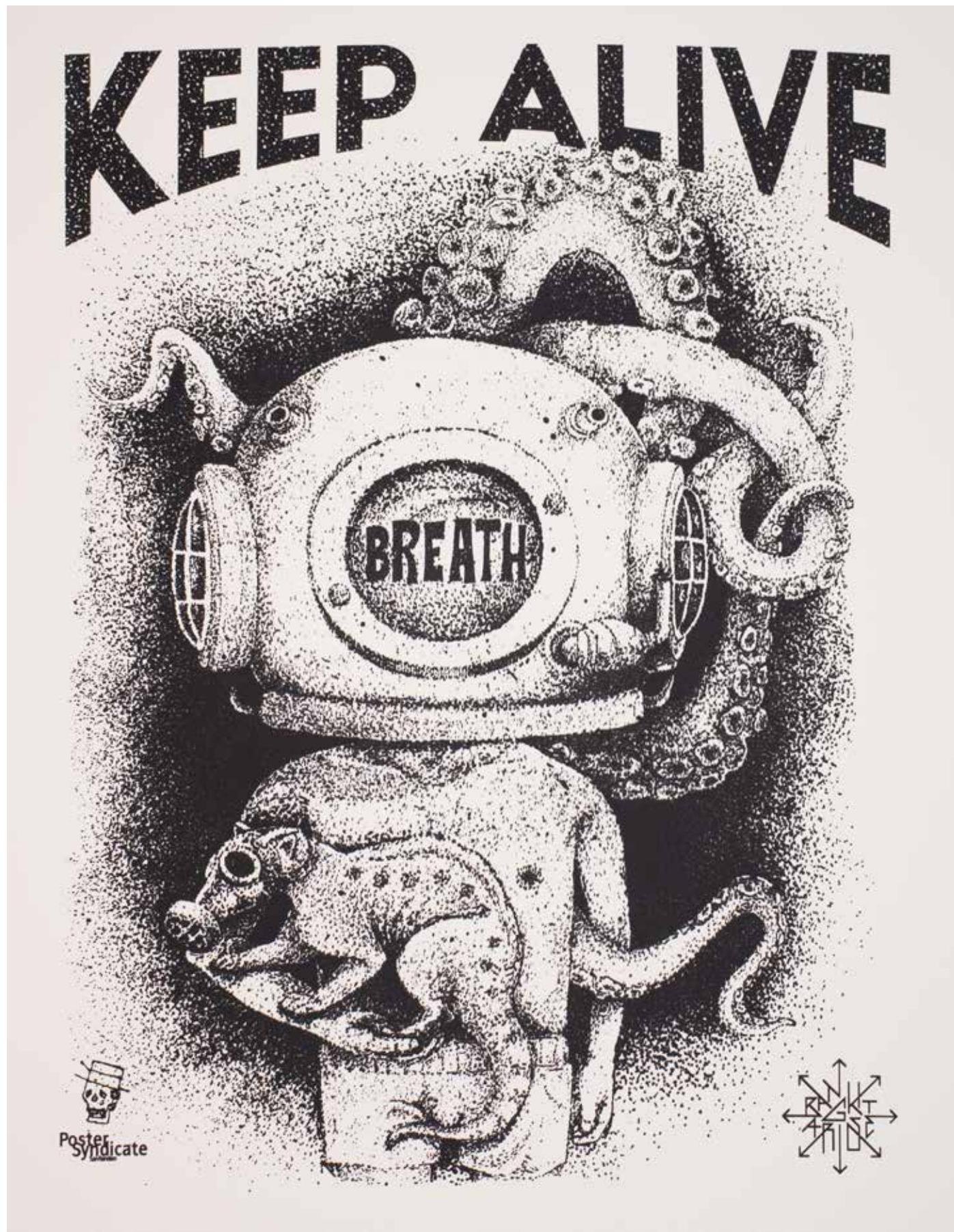
Harind Ndarvati, Nature is Mother, 2018, Bangkit Arise, screenprint



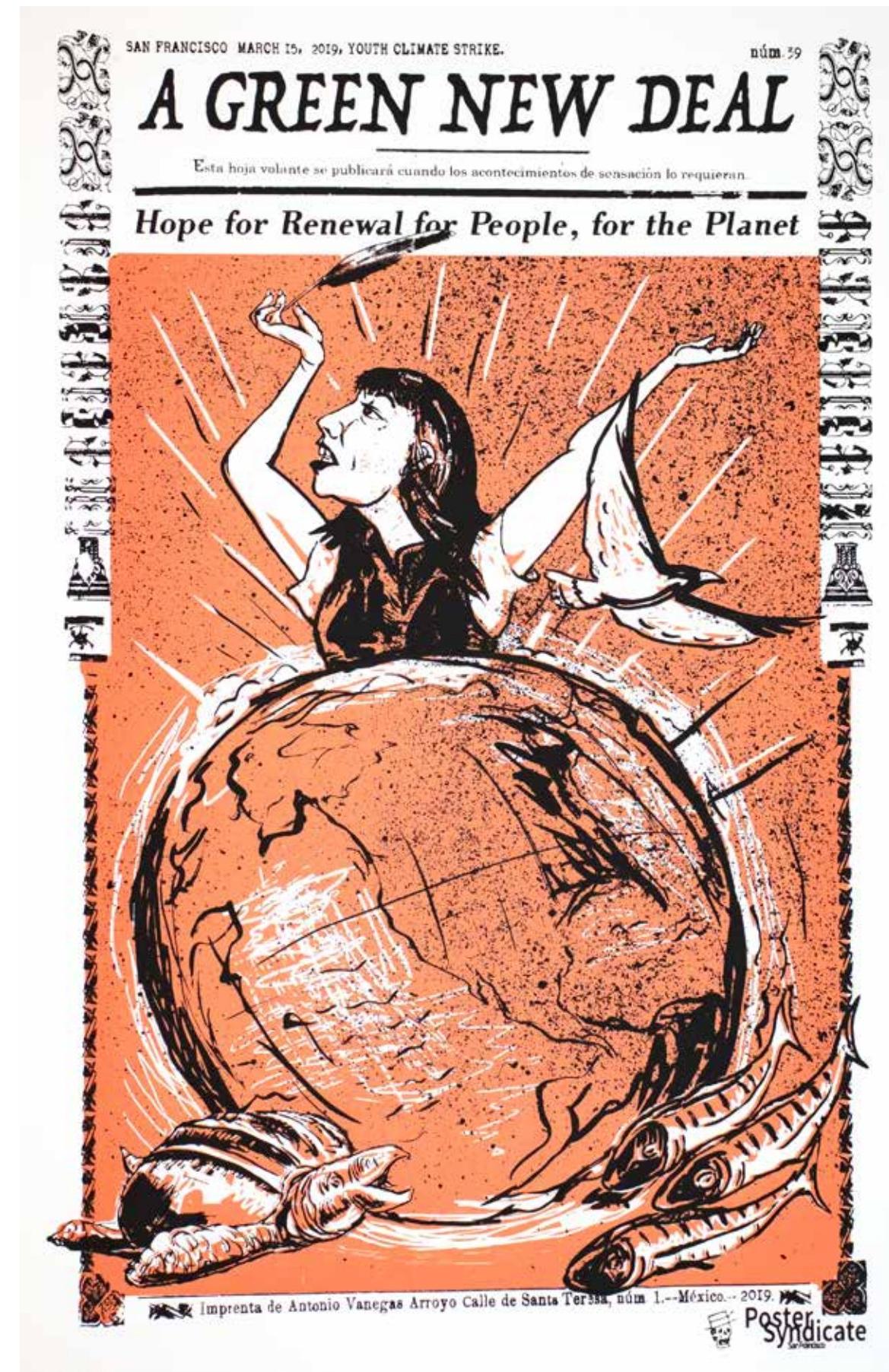
Art Hazelwood, *How Dare You?*, 2019, San Francisco Poster Syndicate, screenprint



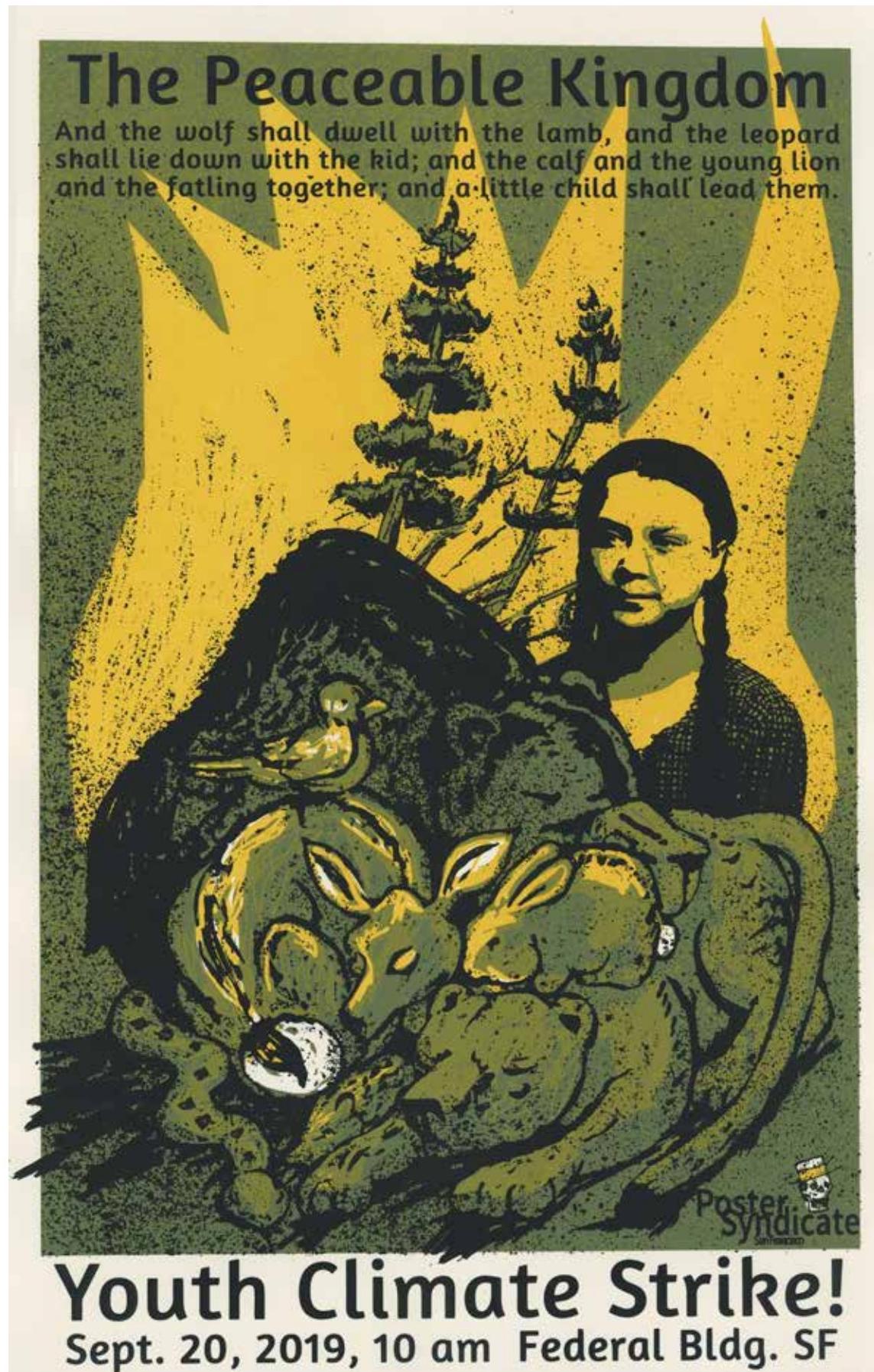
Art Hazelwood, *Climate Action Now!!*, 2018, San Francisco Poster Syndicate, screenprint



Vine Puspita, *Keep Alive*, 2018, Bangkit Arise, screenprint



Art Hazelwood, *A Green New Deal*, 2019, San Francisco Poster Syndicate, screenprint



Art Hazelwood, *The Peaceable Kingdom*, 2019, San Francisco Poster Syndicate, screenprint

"My name is Greta Thunberg, I am sixteen years old and I'm from Sweden. I am grateful for being with you here in the USA. A nation that, to many people, is the country of dreams. I also have a dream. That governments, political parties and corporations grasp the urgency of the climate and ecological crisis and come together despite their differences – as you would in an emergency – and take the measures required to safeguard the conditions for a dignified life for everybody on earth. Because then we millions of school-striking youth could go back to school."

— Greta Thunberg  
Address to the U.S. Congress  
September 18, 2019

## BAD FAITH

### ART ON THE EDGE OF THE ABYSS

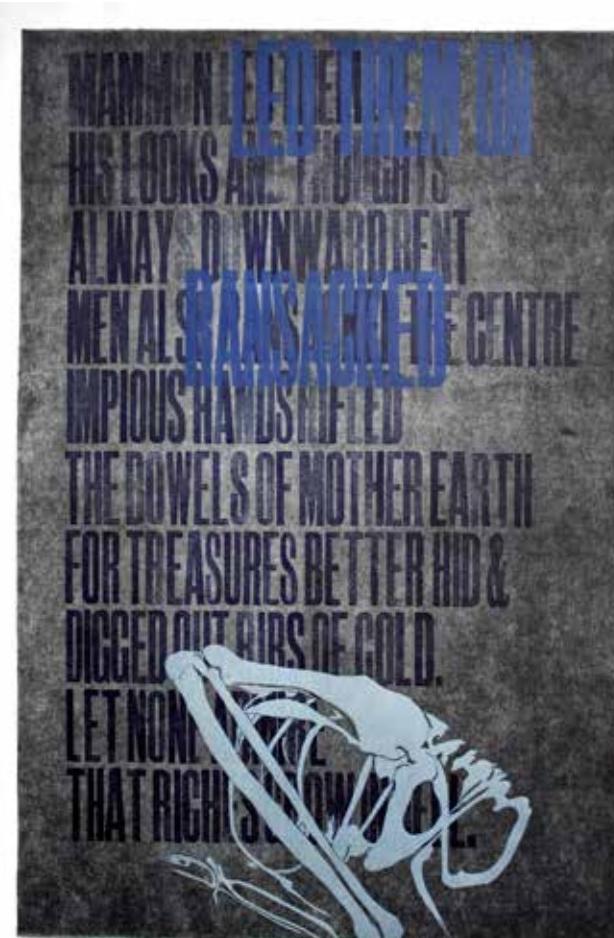
poster series by IMPEDIMENT PRESS, Australia

In 2013, we began researching material for our new book, drawing influence from the writings of Ludwig Leichhardt, the German scientist who in the early 1800s had successfully carried out the world's longest overland expedition. Leichhardt's journey remains a powerful influence in Australia to this day.

Arriving in 1842, just fifty odd years after the beginning of white settlement in Australia, Leichhardt was astonished by the enormous amount of activity and development that had taken place over so short a time. Fascinated and dismayed by the colonists' race to glean as much wealth for themselves as they could (prefiguring the opportunism of 1850s era gold rushes), he observed their incurious disregard for the unique world that surrounded them. Leichhardt recognized that in Australia, the scientist and the artist both found themselves in a difficult place—a place where brawn was preferred.

Our interest in Leichhardt grew after we replicated a number of his journeys, viewing our country and its land in vivid and minute detail through the scientist/explorer's unique perspective. Through Leichhardt, we observed within the peaks and depths of the Australian landscape a fragility that called for understanding and protection. Consequently, our book has taken shape through close observation of the landscape from Leichhardt's time to the present.

In 1953 Australian author Kylie Tennant's introduction to her book *Australia: Her Story* includes Mark Twain's quote which declares Australia as "curious and strange—full of surprises, incongruities, and incredibilities [...]" And yet, the people have continued to plunder and destroy this land, largely insensitive to the ancient culture to which it is spiritually tied, whose people are imbued with an apprehension of mutuality.



Sue Anderson (letterpress), Gwen Harrison (lino cut) Mammon Led Them On, printed by IMPEDIMENT PRESS, Sydney, Australia

Former Chairman of the Commonwealth Bank Board Dr. H.C. Coombs—a man of high reputation according to Tennant—was questioned in 1970 whether the mineral boom had done much to improve the Australian economy as a whole. He responded that Australia had three assets which other countries did not possess: an unequalled view of the Milky Way, the age-old culture of the Aborigines, and the Great Barrier Reef. And yet, by that time, the Milky Way had already been obfuscated by smog and dust in the nation's cities and industrial towns, the age-old culture of the Aborigines was nearing extinction, and the health of the Great Barrier Reef was under threat by the invasive encroachment of crown-of-thorns starfish as a result of the plundering of that species' natural predators, the trochus and the triton shell.

New roads had been opened up in the search for treasures—a continuation of the systematic land clearing that had taken place uninterrupted for the previous hundred years with little regard for native species, habitat and vegetation. Above the new mines and towns, clouds of dust could be seen for miles out to sea. The term "squatter," which had originally applied to men who occupied Crown land without permission, subsequently became a term of respect by virtue of the wealth these men accrued. Just over one hundred and ten years after Leichhardt wrote his observations of the colonial society, Tennant's comments are strikingly similar; the "squatter" mentality had continued to reign supreme.

In 1967, in Queensland, as Joh Bjelke-Peterson was about to come to power, industrial interests were pushing for "developing" the Great Barrier Reef. In addition to proposals for mining the Reef for limestone, the Bjelke-Peterson government was also engaged in serious and advanced talks to open up the Reef to oil drilling, and had secretly zoned up to 80% of the Reef for mining. It was artist John Busst who saw the small notice discretely placed in a local paper. Being an activist, he alerted two friends: the poet Judith White, who was president of the Queensland Wildlife Preservation Society, and Len Webb, a CSIRO forester. The three began the long fight that ultimately saved the Reef and led to the creation in 1975 of the Great Barrier Marine Park.

In October 2017, environmentalists and scientists from the 1960s returned to fight for the Great Barrier Reef once more. Though it had since been listed as a UNESCO World Heritage Site, threats to the Reef's survival had only grown in the intervening years.

During our travels, a local tour operator adroitly articulated the mindset that predominated in those early years of colonizing: everything was there to be exploited. "We had a fairly full-on development-orientated government [...] and mate, if they couldn't drill it, mine it, chop it down or whatever, they really didn't want to know about it."



Gwen Harrison (photograph), Sue Anderson (letterpress), and Malcolm King (silkscreen), Paradise Lost, printed by IMPEDIMENT PRESS; Silkscreen on Somerset paper, KING STUDIO, Sidney, Australia



Gwen Harrison (image) and Sue Anderson (letterpress) Dance with me, printed by IMPEDIMENT PRESS, Sydney Australia

## APOCRYPHAL SELF-PORTRAIT

Dean Rader

The coldest winter I ever saw was the summer I spent in San Francisco.

—Attributed to Mark Twain, but its origins are unknown

The darkest night of my life was that morning in your car. My heart would not stop storming. You said it was climate change. I may not

be able to prove you wrong, but that doesn't mean the end is near. The end is always near. I read somewhere that the sum of the earth's water

will never change. Nothing is taken away, nothing added. Every drop is the same age, every age dyed in the same drop. The

Cut-up clouds stretched and strung out have had about enough. Each day is a boat on a lake that we row ourselves into. We try

to pick at the scab of sunlight itching overhead, but we can't take our eye off the little crack in the hull we know keeps growing.

The Buddha says every place we've been we stay. Right now, he's in my dream sitting alone at an empty table, my tiny chair about

to collapse beneath him. Mark Twain walks into the room looking exactly like Colonel Sanders. In one hand, he cradles a bucket

of chicken, in the other he carries an ax. The heaviest weight is the lightness of the soul, he says to the Buddha. Give in to the dark,

the Buddha replies, and you won't feel the darkness. The longest drive we ever took was that evening we parked next to the cliff.

The sidereal dashboard, the cracked windshield of the body. I want you to know that it is never the darkest right before the dawn.

I want you to know the truth about everything. I want you to know that when those memories drop down, my umbrella opens.

## FORECAST

Dean Rader

A storm is blowing in from Paradise; it has got caught in his wings with such violence that the angel can no longer close them. The storm irresistibly propels him into the future to which his back is turned, while the pile of debris before him grows skyward. This storm is what we call progress.

—WALTER BENJAMIN ON PAUL KLEE'S *Angelus Novus* (1920)

I  
Origin is the goal.

II  
A weather vane  
all a-spin on the roof  
points everywhere at once.

III  
Drunk with wind,  
the angel keeps going in circles.

IV  
The world's screen saver clicks off.  
Everything reboots.

V  
And you with rain on the inside,  
soaked beyond bone, beyond  
the beginning of bone,  
refuse to open the window.

VI  
Don't worry, it's already here.

VII  
We know the past  
only in relation to itself—  
the future on the other hand,

VIII  
The new angel will rise  
and fall at the same time,

like a sequence of events inverted,  
thunder and lightning,  
the reverse,  
then back again.

IX  
Evolution is more than growth,  
it's a mix of conservation  
and revolution.

X  
What does not happen,  
cannot.

XI  
No match for the winds.  
The angel's wings  
beat at the storm the way the heart hammers  
against cessation.

XII  
Stop.  
Just for a second. The tornado  
will carry you wherever  
you want to go.

XIII  
The prediction calls for  
darkening skies, more wind,  
heavy turbulence.  
Though we  
are advised to remain grounded  
in the landscape of the self,  
we take flight.



"WHETHER WE AND OUR POLITICIANS KNOW IT OR NOT, NATURE IS PARTY TO ALL OUR DEALS AND DECISIONS, AND SHE HAS MORE VOTES, A LONGER MEMORY, AND A STERNER SENSE OF JUSTICE THAN WE DO."

—WENDELL BERRY



Above: Robert Dawson, Former Colorado River wetlands, Mexico, photograph; Previous page: Robert Dawson, Polluted New River, Mexicali, Mexico and Calexico, California, photograph

## THE GLOBAL WATER PROJECT

Robert Dawson

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There is a growing awareness that the world is entering an era of a water crisis of global dimensions. From a "war for water" over the corporate take-over of water resources in Bolivia to fighting the displacement of tribal people by large dams in India local water issues are beginning to have global implications. The inspiration for this project came during the summer of 2001 when Robert Dawson traveled with writer Jacques Leslie to follow activist Medha Patkar in her effort to stop the construction

of the Sardar Sarovar dam on the sacred Narmada River in western India. Fifteen years after receiving a Goldman Environmental Prize, Medha is still struggling to improve the lives of thousands of tribal villagers who are being displaced by the dam. It became clear to Dawson that this epic battle over water was symbolic of other struggles being played out throughout much of the world. What these issues represent help define the critical water issues of the twenty-first century.

Without water, life as we know it ceases. We have the same amount of water on earth now as we did when our planet was new. We literally are a "Water Planet." However, more than a billion people today do not have access to clean drinking water. Within the next ten years 40% of the world's population



Robert Dawson, Marsh restored from agricultural runoff near the mouth of the Colorado River, Mexico, photograph

will live in water-stressed countries. Future wars may be fought over water instead of oil. Armed conflicts have erupted over water in California's Owens Valley in the 1920's and the Arab-Israeli war in 1967. India, Pakistan and Bangladesh have come close to war over water disputes. And former U.N. Secretary-General Boutros Boutros-Ghali said "the next war in our region will be over the waters of the Nile, not politics." In 2000, the populace of the third largest city in Bolivia rioted in the streets against police and soldiers over the privatization of their water. It was an ominous wake-up call from the people of Cochabamba. A recent United Nations report predicted rising demand for water is likely to threaten human and ecological health in many countries for generations to come.

In 1999, Dawson traveled to Vietnam and Cambodia to explore the site of one of the most divisive wars of his lifetime. After spending twenty years

photographing water throughout the American West, Dawson used this trip to explore water in the broader international context of Southeast Asia. He began to understand that much of what he learned in the American West was relevant for much of the rest of the world as well. After his 2001 trip to India it became clear that the issue of water was global in scale and he then began his Global Water project. Dawson has made recent explorations of global water to Iceland during the summers of 2004 and 2005 where he photographed the struggle over the construction of a vast dam complex in the Central Highlands. In 2006 and 2007, Dawson has been examining where the oversubscribed Colorado River dries up in northern Mexico, battles over indigenous water rights along the Chixoy River in Guatemala and along the Klamath River in Northern California and water issues throughout South America. This study will eventually result in a large-scale book.



Robert Dawson, Mayans who survived a dam flooding their village, El Naranjo, Guatemala, photograph



Robert Dawson, Shrimp Farm, Cam Rahn Bay, Vietnam, photograph



Robert Dawson, Drip irrigation, San Joaquin Valley, CA, photograph

# ODE TO WATER

for the Water Protectors

Adam Cornford

## I.

Origin  
immanent  
aleph of life  
colorless  
thief of the spectrum  
translucent as spirit  
we are inside you  
as you are inside us  
deep and deeper  
sidereal blue  
ocean's green malachite  
repeated  
in the lungs and intestines  
Primeval and mineral  
you fill the womb  
where the embryo grows  
like the first archaea  
under a sky of blood  
You fill our hearts  
red moons  
driving the double tide  
through our arteries  
through dense mangroves of muscle  
to the shores of the skin.

You replenish  
the green distilleries  
of rose and redwood  
you ascend inside cornstalks  
like filaments of light  
and thread the oak's  
lichened labyrinth  
you bathe the delicate feet of rice  
and the heron's claws  
as you travel always  
where the planet sends you.

## II.

Water  
you fall in trillions  
of vertical mirrors  
from cloud cordilleras  
you spin down tiny cogwheels  
toothed with ice  
in winter's machine  
then you ascend again  
from morning leaves  
from the map's mirrored veins  
from the sea's laboring shoulders  
from our breath  
How could we ever  
exhaust you?  
How could we torture and scar  
your immense  
four-dimensional  
seraphic body?

## III.

But that's what we're doing  
water, all of us  
trapped like you  
in capital's everyday circuits  
passing you  
through the pipes  
of stupidity factories  
shitting and sweating  
into your clarity  
the gray ash of power  
greed's acid sludge  
trapping you  
in overheated sky  
as violent clouds  
garroting you  
with razor-wire molecules  
souring your currents  
with carbon-charred air  
so that your undulant  
miles-wide  
oxygen gardens choke  
and the great reef cities  
become their own ghosts—

## IV.

No more.  
Now water stands up  
in us, ocean ascendant  
on bone masts and spars  
in arterial rigging  
We water defy  
iron-sheathed black snakes  
pumping their corpse-tar  
into the mouths of deep springs  
blinding the rivers...  
Let we water millions  
flow chanting through cities  
we water drain out of offices  
warehouses terminals  
flood bare marble capitols  
break in unceasing waves  
against the armored  
machines of the Poisoners  
the Makers of Desert  
let we water rise  
we water rush over  
and around, we water  
break through  
and wash away.

with deep thanks to Pablo Neruda



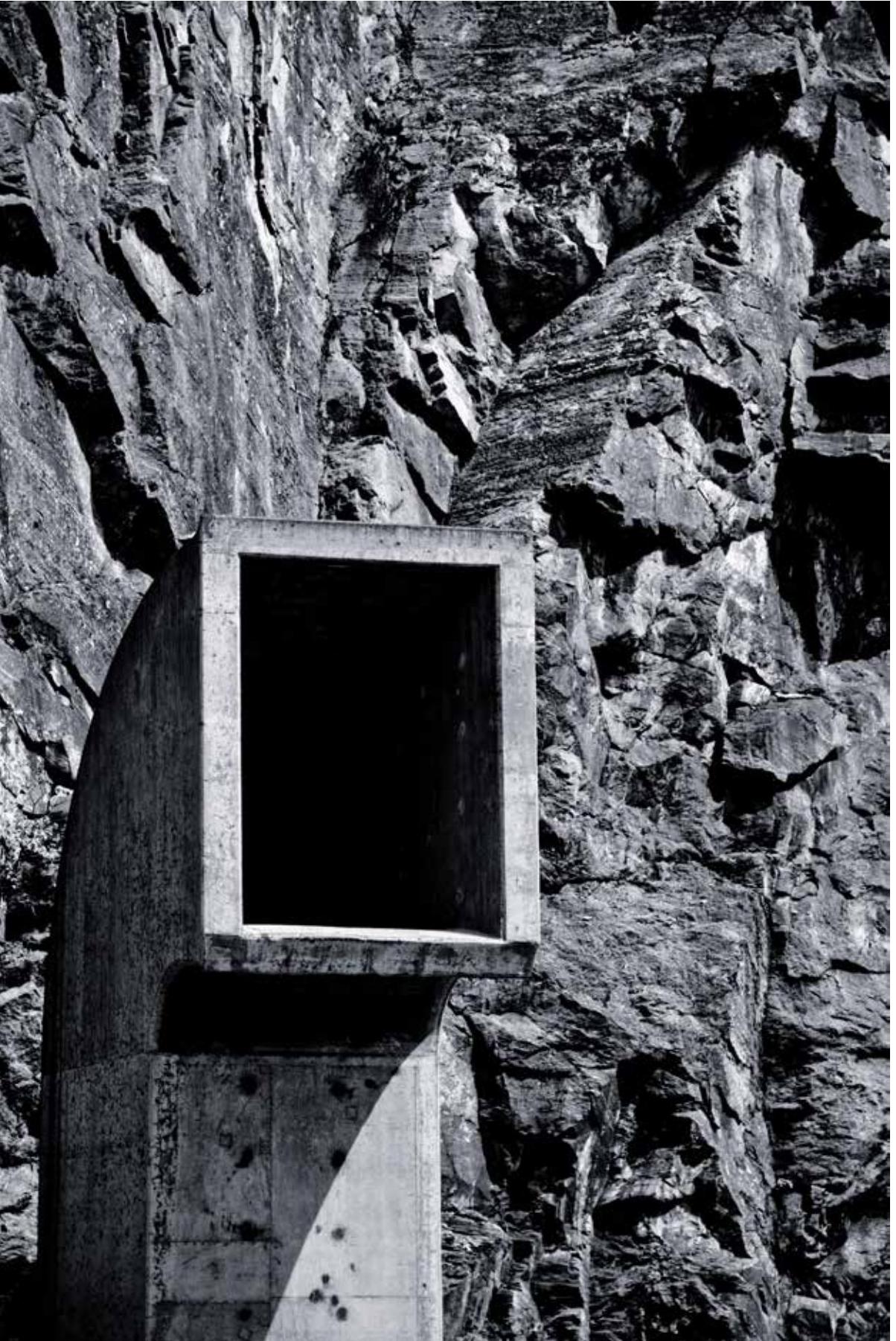
Lauren Grabelle, Earth, Water, Dam

## HUNGRY HORSE DAM

Lauren Grabelle

[WWW.LAUREN grabelle.com](http://WWW.LAUREN grabelle.com)

Photographer Lauren Grabelle's series of photographs of Montana's Hungry Horse Dam captures the space where natural landscapes intersect with the human interventions that attempt to subjugate them to our will. The sloping, parabolic plane of the dam's walls is in tension with the textures of the land and water they interrupt, reminding the viewer that even landscapes which appear on the surface to be majestic and powerful are actually incredibly fragile. Completed in 1952, Hungry Horse Dam was constructed on the South Fork of the Flathead River to provide hydroelectric power, flood control, and irrigation for the state's residents. This photographic series captures not only the beauty and expansiveness of the rugged terrain of the American West, but also the depth of humanity's compulsive need to alter those landscapes—endlessly reshaping, redirecting, extracting.



Lauren Grabelle, Void



Left: Lauren Grabelle, Dam Against Forest; Above: Lauren Grabelle, Cloud



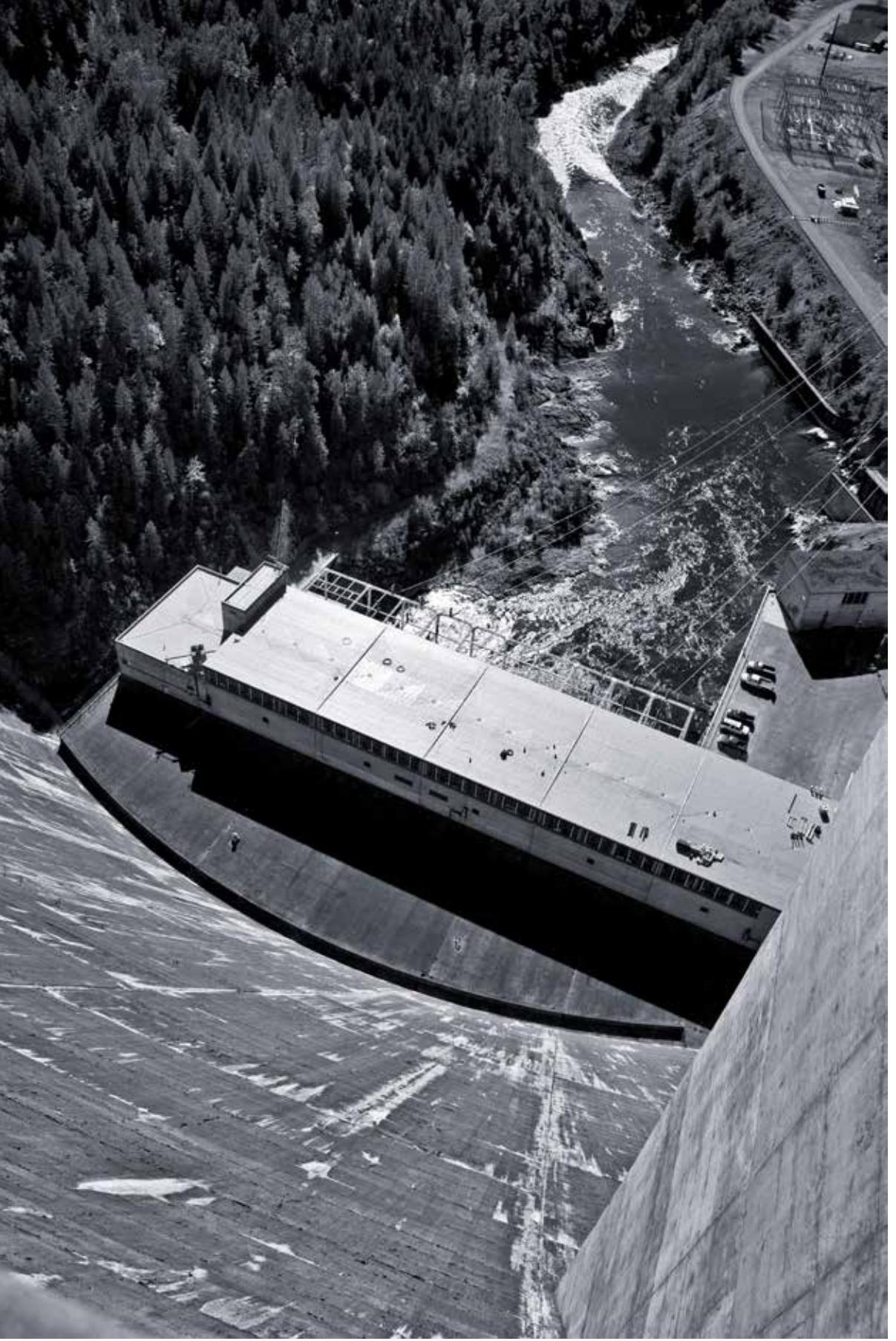
Lauren Grabelle, Lost Horizon



Lauren Grabelle, What Remains



Lauren Grabelle, From the Sky



Lauren Grabelle, Flathead River



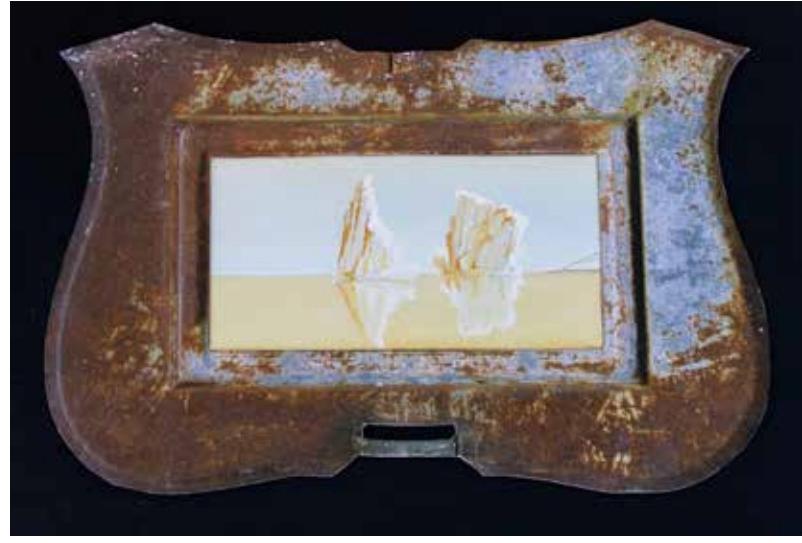
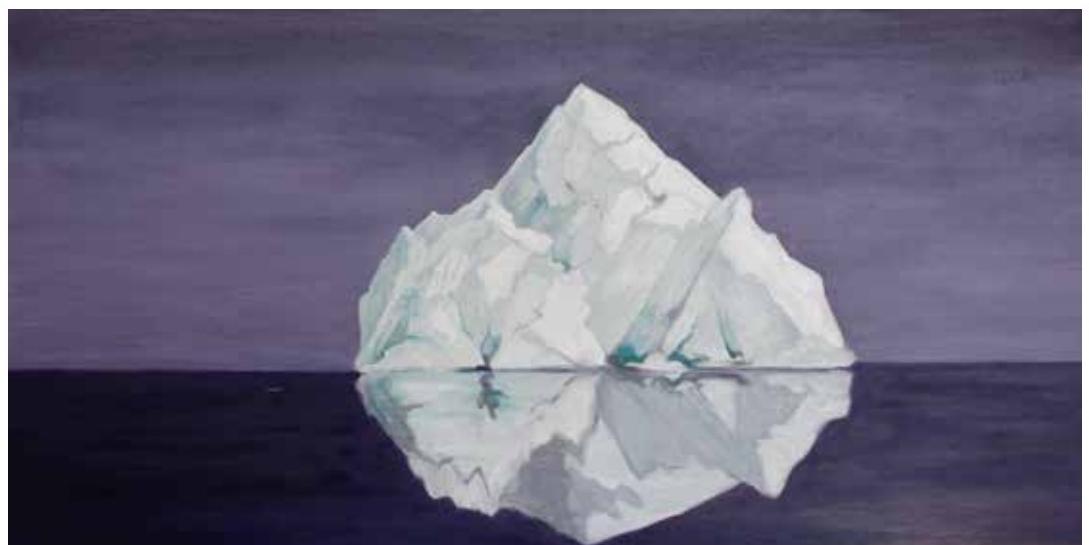
Patrick A Kikut, Glen Canyon Dam, 2019, watercolor

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Patrick A. Kikut, Powell Reservoir: Navajo Generating Station, Crossing of the Cultures, 2019, watercolor

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Top: Patrick A. Kikut, *Sea Ice, After Church, Gold*, 2018, oil on canvas  
Middle: Patrick A. Kikut, *Sea Ice, After Church, Blue Green*, 2018, oil on canvas  
Bottom: Patrick A. Kikut, *Sea Ice, After Church, Violet*, 2018, oil on canvas

Top: Patrick A. Kikut, *Temporary Marker, Sea Ice, Gold*, 2018, oil on paper with temporary grave marker; Middle: Patrick A. Kikut, *Temporary Marker, Sea Ice, Blue Green*, 2018, oil on paper with temporary grave marker; Bottom: Patrick A. Kikut, *Temporary Marker, Sea Ice, Violet*, 2018, oil on paper with temporary grave marker



Zaria Forman, B-15Y Iceberg, Antarctica no. 1, soft pastel on paper, 72 by 72 inches, 2017. Courtesy of the artist Zaria Forman.

## EXTINCTION

for Paul Shepard

Elizabeth Herron

Even cold erodes, and the ice  
that held itself in glacial cleaving  
grows eager to lie down in the sea  
where the great bears will finally sleep,  
sliding quietly into the depths.  
Their bones roll the bottom  
in layers of darkness. What is left  
besides light descending  
into blue shadows, the billowing  
curtains of salt, the slow heft of the sea?  
How can we let what is lost  
settle of its own weight  
into the secret grief, the emptiness  
we mistake for something missing  
in ourselves?



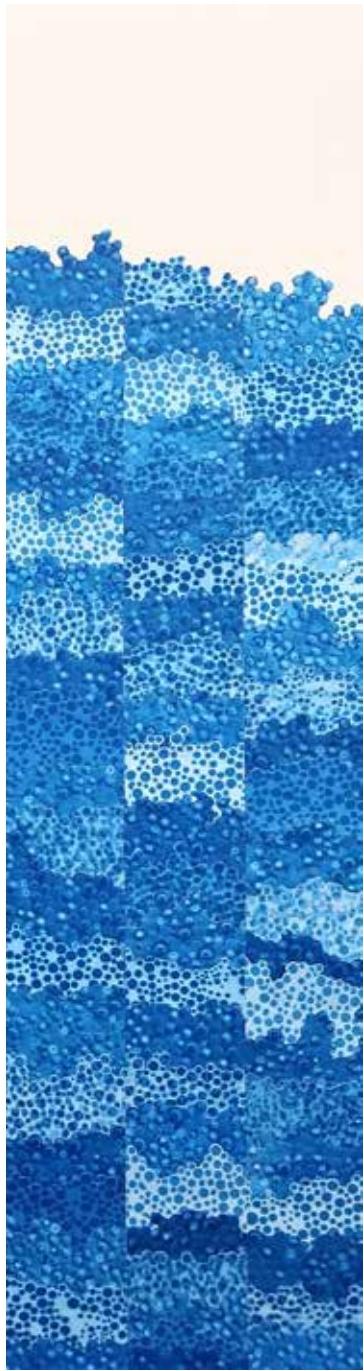
Rachel B. Abrams, *untitled (frazil XLI)*, 2019, Paper on Recycled Matte Board, 19.75 by 10.75 inches

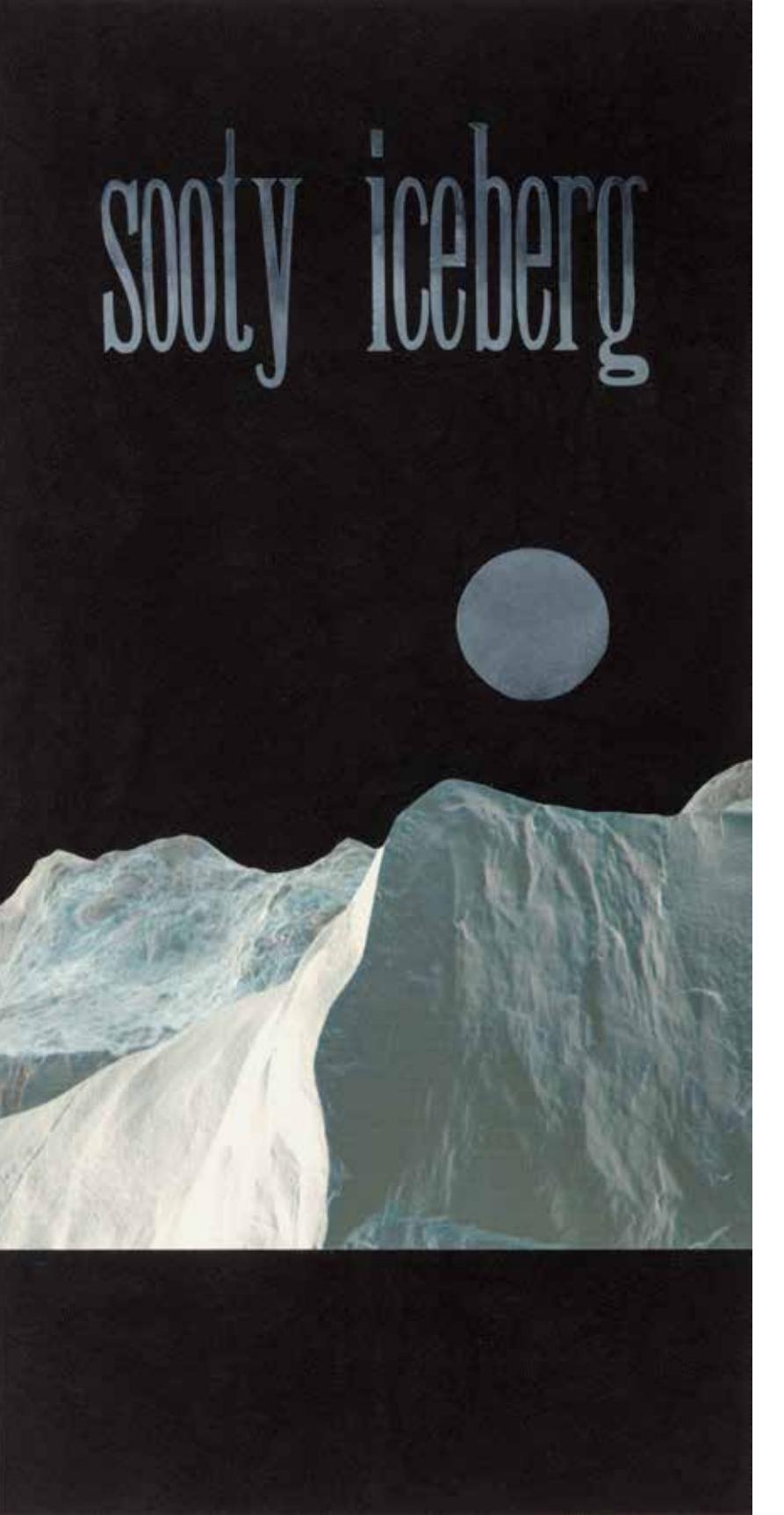


Left: Rachel B. Abrams, *untitled (extinct polynyas I)*, 2019, Paper, 10.25 by 6 inches; Right: Rachel B. Abrams, *untitled (frazil XLII)*, 2019, Paper on Recycled Matte Board, 25.75 by 6.75 inches

Having experienced the immensity of Arctic glaciers, as well as the psychological devastation of standing on land that was until recently covered by a glacier, I wish to bring this experience home, to allow someone who may not have the opportunity to be in the physical space of a glacier, to be in the psychological space of a glacier. These collages are in part developed from exposing light-sensitive paper to plastics and glass, using known pollutants of the sea to render the trapped gases stored in the layers of glaciers, gases which when studied illustrate the level of ecosystem health, gases that as we fail to act on climate change transform from stored information to lost evidence.

Rachel's work will appear in the Extraction Exhibition FIRE and ICE at Connecticut College, New London, CT, in September through October of 2021.





Above: Sue Huggins Leopard, Blackout, 2020, letterpress and ink jet photo  
Right: Sue Huggins Leopard, Vanishing, 2020, letterpress and wax on Kitikata paper, photograph by Steve Baldwin



## ICE RECEDING/ BOOKS RESEEDING

### AN EPHEMERAL SERIES OF HAND-CARVED ICE BOOKS RESEEDING RIPARIAN ZONES.

Basia Irland

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I am enthralled by the way the ice books give physical form to dialogue and scientific understanding of climate change's impact on our rivers, and the way the melting of these books represents both a kind of renewal as they disperse their seeds and a reminder of the ice being lost daily in the arctic.

—Emma Komlos-Hrobsky,  
Poets & Writers Magazine

*Ice Receding / Books Reseeding* emphasizes the necessity of communal effort and scientific knowledge to deal with the complex issues of climate disruption, poisonous discharge from mines, and watershed restoration by releasing seed-laden ephemeral ice sculptures into rivers. I work with stream ecologists, biologists, and botanists to ascertain the best seeds for each specific riparian zone. When an ecosystem is restored and the plants grow along the riverbanks they give back to us by helping sequester carbon, mitigating floods and drought, pollinating other plants, dispersing seeds, holding the banks in place (slowing erosion), creating soil regeneration and preservation, acting as filters for pollutants and debris, supplying leaf-litter (for food and habitat), promoting aesthetic pleasure, and providing shelter/shade for riverside organisms including humans.

This project presents a lyrical way to promote positive actions that will have constructive results in helping restore streams around the world and provides a model that can be easily replicated. River water is frozen, carved into the form of an open or

closed book, embedded with a global cross-cultural ecological language consisting of local native seeds, and placed back into the stream.

The title of this series of projects, "Ice Receding/Books Reseeding," was originally conceived for Weather Report, a groundbreaking exhibition and catalogue about the climate crisis curated by author and cultural critic, Lucy Lippard for the Museum of Contemporary Art, Boulder, Colorado. In order to call attention to melting glaciers, poisonous radioactive drainage from the milling of radium, and embed an action within the sculpture, I carved a 250-pound tome from ice and engraved it with a seed composition. Arapaho Glacier, which provides a large percentage of Boulder's drinking water, is receding rapidly due to climate disruption. When it is gone, from where will Boulder residents, both human and non, obtain water? These sculptures depict problems, including receding glaciers and dangerous outflow from mines, and a suggestion for action—reseeding riparian zones to reduce some of the effects of climate disruption through plants and to bring attention to the overwhelming number of streams that are adversely affected by toxic mine drainage.

I am honored to be invited globally to create ice book projects where I work closely with local communities. For me, an important aspect of a community-based ethic is gifting. The participants have donated their time, energy, ideas, and enthusiasm to each ice book project, so it is with great joy that I give back by presenting each person with a hand-made gift related specifically to the river where we have all worked together. Reciprocity.

Ice books have been created around the world and I personally witness the high number of rivers that are contaminated with toxic mine drainage. The seven rivers, with accompanying ice books, I have chosen to discuss here are Boulder Creek, Colorado; Ottawa River, Canada; Headwaters of the Río Grande, Colorado; Oconee River, Georgia; Great Miami River, Ohio; Big Wood River, Idaho; and Deckers Creek, West Virginia. I will not go into the chemical details but will



Basia Irland, Tome I: Mountain Maple, Columbine Flower, Blue Spruce

list the types of mine and the results that detrimentally effect the quality of streamflow.

#### BOULDER CREEK, COLORADO

According to the Colorado Geological Survey, Colorado is home to about 23,000 abandoned mines, with more than 550,000 located within the United States. Minerals and precious metals such as gold, silver and tungsten comprised the primary activities within Boulder's mining industry. Some of the mills that processed ore near the mouth of Boulder Canyon and into the town of Boulder still have concentrations of poisonous radioactive materials from the milling of radium. Even though the mines have been closed for a long time, present day concerns include acid drainage, mine pilings left behind, heavy metal accumulation, and radon. The Environmental Protection Agency has rated the Rocky Mountain

Region as having the highest possible occurrence of radon, a carcinogen, and also estimates that over forty percent of Western watersheds are contaminated from mine leakage.

#### OTTAWA RIVER, CANADA

There are currently no solutions for permanently safeguarding the radioactive waste that has been generated for ninety years along the banks of the Ottawa River at the Canadian Nuclear Laboratories. So far, the river is safe, but the probability of radionuclides contaminating the aquatic ecosystem is very real. Ottawa Riverkeeper is working to protect the drinking water source of over two million people by trying to find ways of containing the nuclear waste securely for hundreds of years and how to prevent any leakage into the river.



Basia Irland, Tome II: Fremont Cottonwood (*Populus Fremontii*), at dusk, Rio Grande

#### RÍO GRANDE HEADWATERS, COLORADO

Draining into Willow Creek, a tributary of the Río Grande, three million gallons a week of acid mine drainage carrying lead, cadmium and zinc leach from the collapsing Nelson Tunnel, which led to a Superfund designation. Zinc levels are particularly high and disrupt fish reproduction for four miles down to the confluence with the main stem of the Río Grande, where the dilution begins to ease the impact somewhat. From its beginning in the mountains of southern Colorado, the Río flows 1,875 miles through New Mexico, and becomes the border between Texas and Mexico. It is the main artery that glides through my hometown of Albuquerque, New Mexico and so I have a deep attachment to this

river and have created community-based projects along its entire length.

#### OCONEE RIVER, GEORGIA

Kaolin quarries release effluents containing cadmium, sulfide mineral contamination, and zinc, which is poisonous to fish populations.

#### GREAT MIAMI RIVER, OHIO

The second largest mining operation in Ohio is sand and gravel (which are the only mineral resources to be produced in every state in the U.S.). Backhoes and bulldozers dig deep into the Great Miami River, shoveling up tons of gravel from the water and dumping it on the banks, thereby disturbing the



Basia Irland, Ottawa River Book One: Red Maple (*Acer Rubrum*), American Elm (*Ulmus Americana*), Canada

flow and changing the shape of the river. This process releases contaminated sediment downstream, and lowers the streambed, causing the water to move faster.

#### BIG WOOD RIVER, IDAHO

Arsenic and other poisons from abandoned mine sites continue to leak into nearby wetlands and the East Fork of the Big Wood River threatening native trout populations and other species.

#### DECKERS CREEK, WEST VIRGINIA

Since the pH level (the measure of acidity of a solution) in Deckers Creek drops from 7.7 at the source all the way down to 4.2 at the old Richard's Coal

Mine site that continues to leach poisonous acid mine drainage into the stream, we used a limestone “text” on the ice books instead of seeds. Limestone is an alkaline agent with the ability to neutralize strong acids.



Basia Irland, *Molybdenum Mine*, Vol. I

*Molybdenum Mine, Volume I* and *II* commemorate a huge scar that gapes across acres of abused wilderness in northern New Mexico caused by the Chevron Questa Molybdenum Mine (formerly, the Molycorp Mine). Wandering illegally among the heaps of discarded mining equipment, Basia Irland found the text for these hand-carved wooden books – fool's gold and rust – poetic justice for this site, the tailings of which historically killed aquatic habitat for over ten miles downstream in the Red River and contaminated the soil. The mine began operations in 1920 and was officially closed in 2014.



Basia Irland, *Molybdenum Mine*, Vol. II



Above: Jane Baldwin and Leonardo Sangiorgi, *Se A Parlare Non Resta Che il Fiume* (If Only the River Remains to Speak)

## IF ONLY THE RIVER REMAINS TO SPEAK

Jane Baldwin

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*Se A Parlare Non Resta Che il Fiume | If Only the River Remains to Speak*, is an art installation with the common goal of raising awareness about the environmental and humanitarian crisis taking place in the Omo River Valley in southwestern Ethiopia and Lake Turkana, Kenya.

Narrated in the voices of the women, this art installation tells a present-day story of a river and the indigenous peoples it sustains. The poetic multimedia journey honors the women of this region, the birthplace of humankind, and reveals the deep bonds between humans and their habitat, between other peoples and ourselves. This exhibition, through the power of personal storytelling, gives voice to the voiceless—documenting the dignity of their lives and the tragic consequences of hydroelec-

tric power projects currently underway. Grave human rights atrocities and environmental intimidation now threaten the tribal peoples, as dams, land grabs and villagization destroy their self-sustaining way of life.

This immersive art experience, using technology to simulate human interactions with the women, is a collaboration of Studio Azzurro Produzioni, an artistic multimedia firm based in Milan, Italy, and Jane Baldwin of Sonoma Valley, California, in support of Survival International, Milan, and its global movement for tribal people.

It was first exhibited in Milan, at the Museo delle Culture (MUDEC) in 2018–2019, as part of the museum's Future Geographies. For an in-depth understanding of the art installation please visit [www.janebaldwin.com/news](http://www.janebaldwin.com/news).

Preliminary conversations are underway to travel *Se A Parlare Non Resta Che il Fiume*, in Europe during 2021.

The metaphorical sculpture of desiccated red clay symbolizes the crumbling and parched meandering Omo riverbed, deprived of its annual flood cycle by controversial Ethiopian dam developments.



Studio Azzurro, rendered image: *If Only the River Remains to Speak*

## SALMON RIVER

Jon Jost

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Rising in the Sawtooth range in central Idaho, the Salmon River runs north from the Norton Peak in the Sawtooth area, to Stanley, then cutting east towards Challis and Salmon, then cutting west to Riggins where it sharply turns north again before making a u-turn near White Bird, it goes south and joins the Snake River. It runs a total of 425 miles, all in Idaho, passing through the Salmon River and Clearwater mountains, there called The River of No Return, through a steep 7,000-foot-deep canyon, the third deepest in the United States (Kings Canyon in California is deepest, and nearby Hell's Canyon of the Snake River is second).

The Salmon River is one of very few undammed rivers of its scale in the United States, and two segments, the Middle Fork and a section of the main Salmon River, known as the Main Fork, are protected as National Wild and Scenic Rivers. The Middle Fork was one of the original eight rivers designated Wild and Scenic in 1968. It is magnet for rafters and fishing.

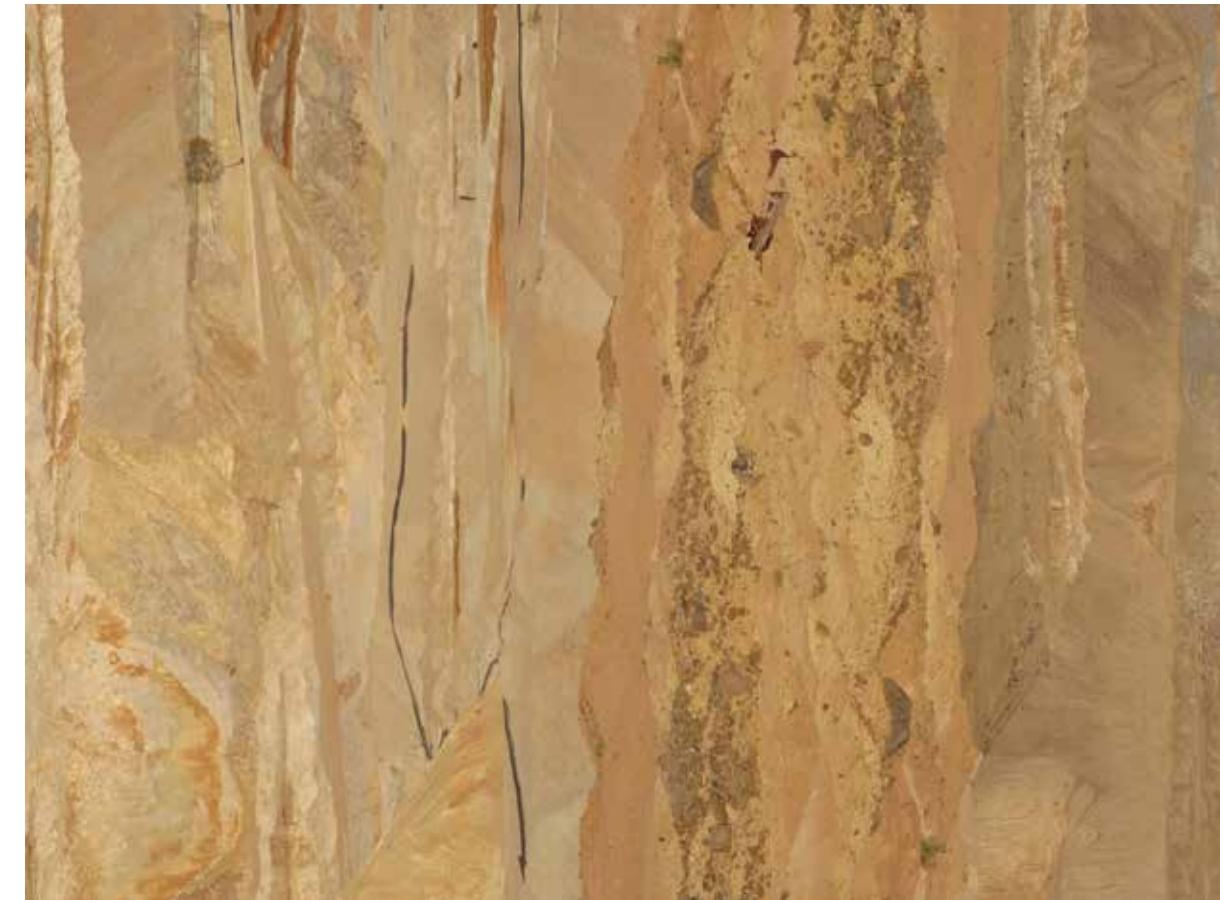
The geology is typical of the entire area, with a deep history of tectonic shifts making once oceanic islands inland mountains, from the collision 200 million years ago of what is now the American continent and the subduction plate along the northwestern Pacific Coast. More visibly marked are the signs of the much more recent basalt flows, which stamp the entire Columbia River area of Oregon and Washington, and much of Idaho. The columns of basalt protrude clearly in much of this area, and can be seen in the walls of the canyons, and the sprawl of the once molten liquid, building to a depth of one mile thick, which flowed often over a period from 10 to 15 million years ago can be seen bent and twisted by geological forces. It makes for a stunning and varied landscape.

Historically 45 percent of all the steelhead (ocean-going rainbow trout) and 45 percent of all the spring and summer chinook salmon in the entire Columbia River Basin was produced in the Salmon River and its basin contains most—up to 70 percent—of the remaining salmon and steelhead habitat in the entire Columbia River Basin. While the entire Salmon River runs wild, the chinook, steelhead, and sockeye salmon populations are subject to the effects of four dams along the Lower Snake River, into which it feeds, and then to a sequence of four further massive dams across the Columbia River. While belatedly these dams were installed with fish ladders for the salmon runs, the population dropped precipitously and though they were listed in the mid-90s under the Endangered Species Act, the salmon remain at risk and have not recovered.

The “harnessing” of rivers, to extract energy for conversion to electricity, to control flooding, to provide lakes for recreation, and to store water for irrigation is, for us, perfectly natural and intelligent—why let all that water and energy go to waste? When we do such things we seldom think two steps beyond the immediate logic of our desires. It is usually only after we have acted that the real bill becomes clear.

In the case of the Salmon River, it would seem innocent, its wildness a protection against accountability. But being part of the natural world, our world, it is intimately connected to everything else. The Salmon River is part of the Snake, and the Columbia and then the vast Pacific Ocean. And there are bills to be paid.

In Puget Sound there are three pods of Orca killer whales, their numbers now down to 73. Aside from the usual risks of cohabiting with humans, the Orcas are being depleted because one of their major food resources—salmon—are, like them, diminishing rapidly in numbers. The Orcas are being starved to death. And so in the spawning grounds of the Salmon River, in Idaho, the chain that leads to Puget Sound is broken. The laws of unintended effects resound.



Jon Jost, Berkeley Pit Collage #7, photo collage



Jon Jost, Slag Wall #2, photo collage

## **BRINGING BACK WATER**

Elizabeth Herron

That night you went down the street  
to bring back water – sweet  
smell of rain  
on your shirt, the good water  
from who-knows-where  
in its killer-plastic bottle. Wind  
through the open door, leaving  
returning. Now stars,  
too early for the old moon.  
There is a wilderness of pure joy  
beneath all sorrow.  
It's where things begin.



## **GIRL IN FRONT OF YELLOW WALL**

Sönke C. Weiss

In November 2018, fifteen years after my first visit, I photographed this girl in front of a yellow wall in Gulu. It was a Sunday. She was washing dishes. To me she looked like a ballerina. Poetry in motion. A wonder, considering Gulu's history. Gulu is a city of around 150,000 people in northern Uganda not far away from the border to South Sudan. Between 1987 and 2006 the Lord's Resistance Army, a militant religious cult group, fought a war against the civil population. More than 100,000 people died, two million were internally displaced, and up to 100,000 children were forced to fight as child soldiers. The wounds of war are beginning to heal. A new generation is rising, expressing the will to prosper and to strive for progress—a better future. To me, Gulu is the archetypical African city. Despite all challenges, the people love their homeland and do not want to leave. One of the biggest issues is lack of water. Droughts—a few decades ago unheard of—are common now. The climate is visibly changing.

## CLEAR LAKE

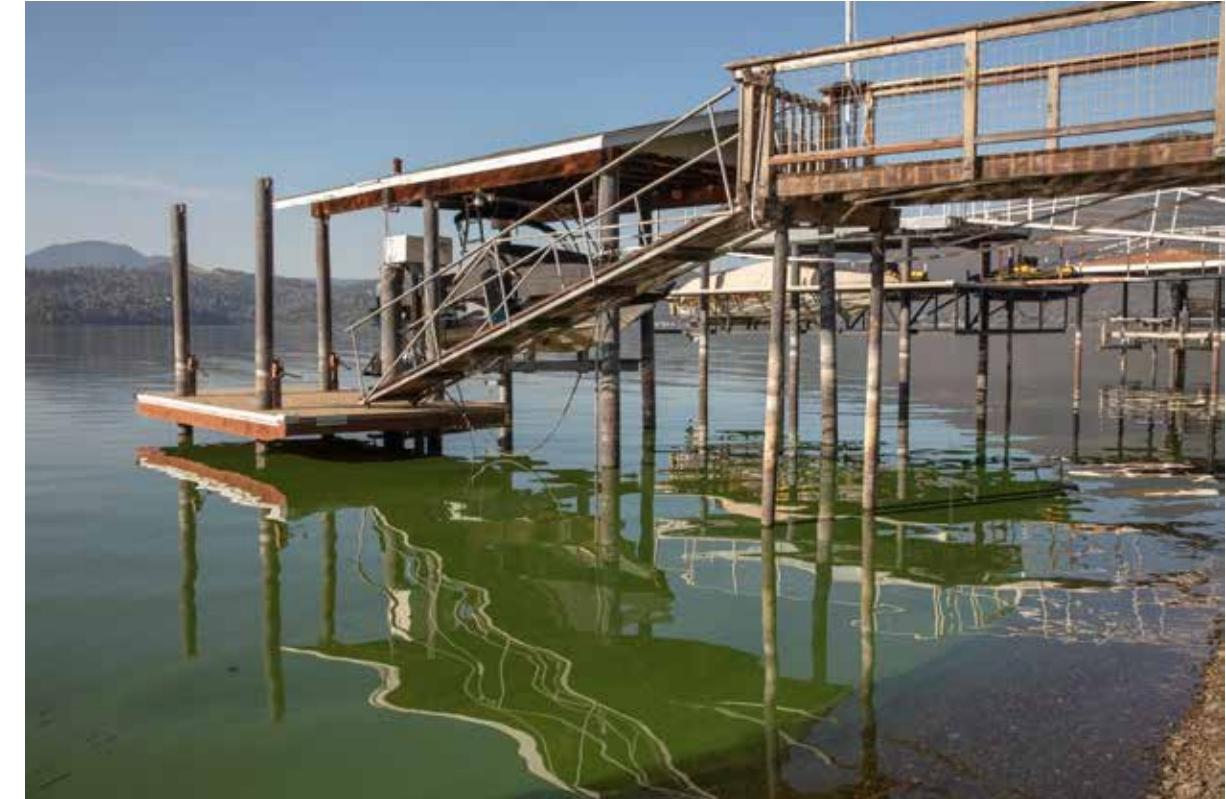
Peter Goin

Clear Lake is touted as the largest, natural freshwater lake entirely within California; its ancient history dates back more than 480,000 years. Clear Lake's volcanic basin is located on a topographic divide between the Russian River system to the west, and the Sacramento Valley, east. The lake initially drained to the Sacramento River, then into the Russian River, and currently drains into the Sacramento River. The Grigsby Riffle, a rock sill located at the confluence of Cache and Seigler Creeks near Lower Lake, impounds the natural lake level. However, as a managed reservoir, multiple decrees enacted from 1920 to 1995 have sought to balance the storage of water for downstream water supply, maintain levels for local recreation including fishing, and minimize local flooding. Because of the limited discharge capacity of the Cache Creek channel, the lake will flood during extended periods of heavy rainfall. Clear Lake is approximately eighteen miles long, seven miles wide, and is a relatively shallow lake, with depths averaging twenty-one feet, maximum depth of fifty-nine feet.

Clear Lake State Park, on the southern shores of the lake, advertises that swimming is popular, and that professional fishing organizations have designated Clear Lake as the nation's number one bass fishing lake, complemented by catfish, blackfish, bluegill, crappie, hitch, and Sacramento perch. Yet, Clear Lake is threatened. The fish are perilous to consume, catch-and-release is less a reflection of enlightened sporting ethics, and more about self-preservation. The lake contains poisonous mercury, noxious matted algae, deadly cyanobacteria, and Hydrilla. One report indicated that the problem of neurotoxin contamination is serious enough such that a large dog, drinking its water, could die in only 20 seconds. During summer months, heavy blooms of blue-green algae, the source of the neurotoxin,



Peter Goin, Pier reflections, 2019, Pirates Cove, Clear Lake



Peter Goin, View from shoreline, 2019, Pirate's Cove, Clear Lake



Peter Goin  
Last light and table, 2019,  
private dock, Pirates  
Cove, Clear Lake



Michael Lundgren, *Waypoint*, 2018, 36 by 26 inches, pigment print



Michael Lundgren, *Current*, 2019, 24 by 30 inches, pigment print



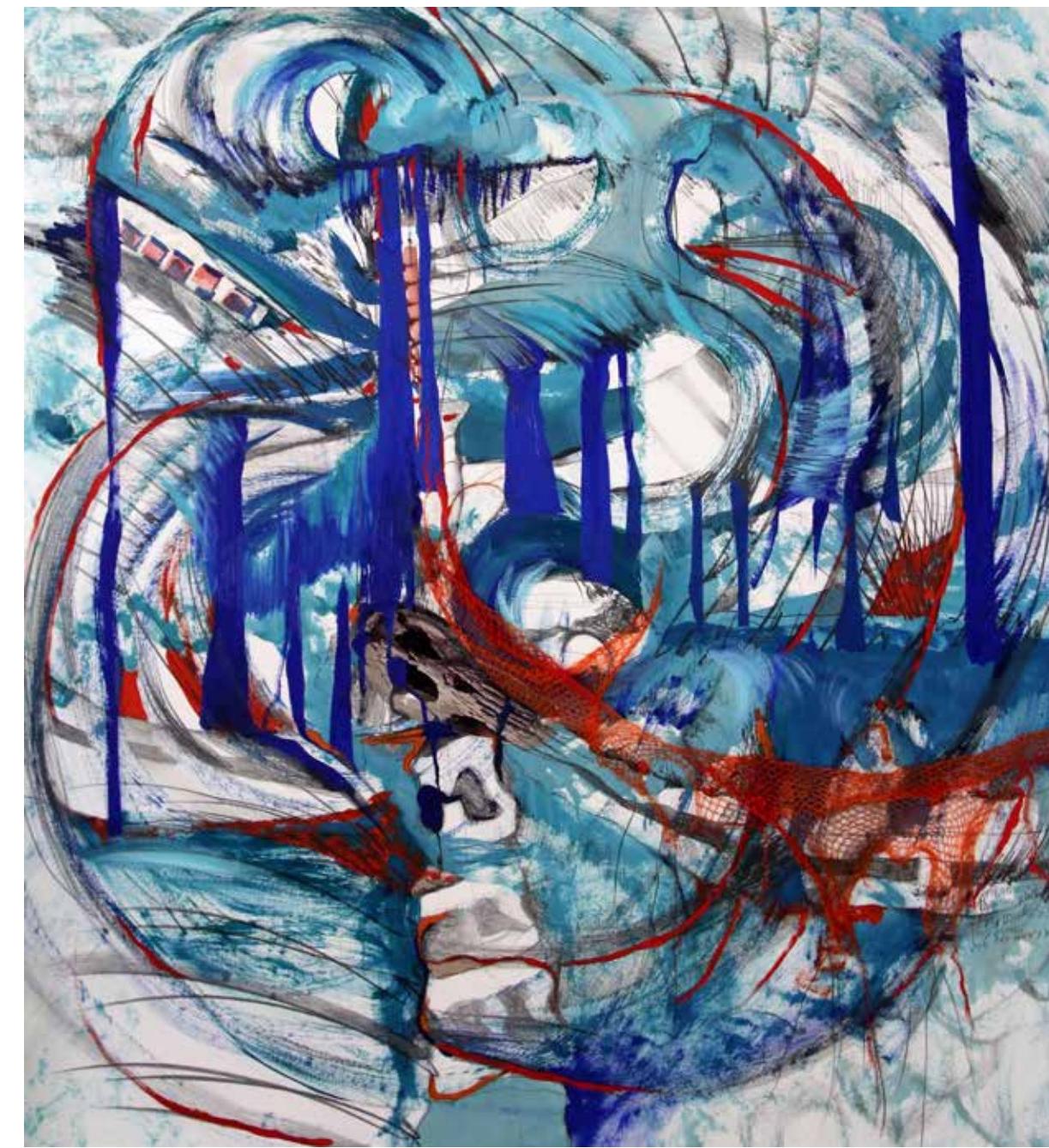
Michael Lundgren, *Vent*, 2018, 30 by 24 inches, pigment print



Mandy Barker, WHERE? – No One Wears A Watch



Pam Longobardi, Swerve, 2019, over 500 ocean plastic objects from Alaska, Greece, California, Hawaii, the Gulf of Mexico and Costa Rica; steel specimen pins, 96 by 54 by 8 inches



Jill Vaughn, First Came Ardi, Then Plastic, 2019, oil paint, pencil, paper and plastic netting collage on paper, 56 by 50 inches

Hans Holbein painted *The Ambassadors*, a double portrait with a distorted skull in the foreground to represent the commonality of our mortality. In my piece, an elongated image of the skull of *Ardipithecus*, the first female biped discovered in Ethiopia, is placed in the foreground of a human ribcage in the Pacific Ocean's plastic gyre. In making this work, I question our literal consumption of plastic; where has the feminine gone in nature; and are we still controlled by the "wealthy ambassadors" of today?

## ENVOI: SAN FRANCISCO

Tess Taylor

"A number of the ships, wharves, and other infrastructure of San Francisco's Gold Rush waterfront lie buried beneath the streets, sidewalks..."

—California Disasters, 1812–1899

City of shipwrecks. City of water.

Sand hills where mountain lions

prowled above windjammers.

City whose first Anglo historians proclaimed

themselves to be the only modern progress

& promised to "sweep away forerunners"—

who wanted to bind the world's many peoples

& with their new port to do China

"what the British had done with India

(but sooner)."

City of Gold Rush & bust & boom;

city of mudflat; of private wharves.

Buildings to ships, ships into buildings;

forest to everything;

city of old growth & redwood pilings.

City of whores & Mackinaw blankets;

of Irish whiskey & fireproof paint;

of schooners abandoned for goldfields

the Niantic      the Apollo      the General Harrison.

City whose abandoned ships became

floating opium dens next to floating prisons.

City of otter pelts & shovel salesmen,

whose white settlers funded their own microgenocides;  
city of quick fires & tallow & opium;

of murre eggs stolen off the Farallones—  
City of landfill & movable real estate

where right now a woman in underwear  
howls in the street

& a barefoot teenager  
scratches his sores

& an addict begged the last of my rice  
just outside this room where I am writing

city of faultline city of water:

As much as of anywhere I am of you



Christopher Volpe, T'Gallant Sails, oil and tar on canvas, 36 by 48 inches

## LOOMINGS

Christopher Volpe

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My paintings for the Extraction Project use the primordial material of tar as their medium. The tar comes in for its deep, metallic black color, its aqueous quality, its earthy sepia tones when thinned, and its resonance for our moment in history.

I started painting with tar when two things in my life converged: re-reading Herman Melville's *Moby-Dick* and becoming fascinated with nineteenth-century painter Albert Pinkham Ryder, who's said to have used tar in his paintings. The resulting series is LOOMINGS, so named after the first chapter

of *Moby-Dick*. I hope the series evokes what Herman Melville saw prophetically in the 1850's: American industrial history as a neverending pursuit of wealth and the domination of "savage" nature, even at our own expense.

However, the works aren't narrative, nor do they illustrate events in Melville's novel. But like the book, they're largely, at least for me, about the confrontation of our own ignorance, our melancholy quest for knowledge, reality, and enlightenment in an unknowable universe. More than a whaling story, *Moby-Dick* is really a vast American prose poem epic invoking the history and future of America and our relationship with the cosmos.

America's global industrial dominance began with the Quaker whaling ships; petroleum (oil) is



Christopher Volpe, Westward, oil, tar and gold leaf on canvas, 16 by 24 inches

the successor to whale oil, which literally fueled the industrial revolution, lit the night, and greased the machinery for the rise of what Melville, already in 1851, called "the all-grasping Western world."

As Melville does in *Moby-Dick*, the paintings consider the "oceanic feeling" in terms of humanity's problematic longing to transcend or at least make peace with nature even while encroaching upon it. Tar paintings outside this series address extractive culture directly. Event Horizon #1 and #2 are both based on AP photos of the 2010 Deepwater Horizon industrial disaster in the Gulf of Mexico, the largest marine oil spill in history.

Although my painting has always had roots in the landscape (or seascape), working with tar brings a lot of things together for me, referencing what I've long felt is our culture's warped relationship with nature while synthesizing contemporary visual and

literary symbolism and resonant works of art and literature of the past.

Since Melville published *Moby-Dick*, we've had 150 additional years of oil-driven industrialization. Humanity continues to exploit nature without adequately understanding our place within it or even our own history. We're still tempting Ahab's unknowable gods and flouting signs and portents of extinction.

Christopher Volpe's work will be exhibited in the upcoming show FIRE AND ICE in New London, CT from September 1 to October 15, 2021. LOOMINGS was awarded the St. Botolph Club's "Outstanding Painting" award and the Nellie Taft Grant for visual arts. Works from the series have been exhibited at Patricia Ladd Carega Gallery, Center Sandwich, NH, Matter & Light Fine Art, Boston, the St. Botolph Club, the New Bedford Art Museum, and Kimball Union Academy in Meriden, NH.



Christopher Volpe, *Event Horizon #2*, oil and tar on canvas



Christopher Volpe, *Event Horizon*, oil and tar on canvas, 48 by 48 inches



Jos Sances, *Or the Whale...*, 2018 – 2019, scratchboard, 14 by 51 feet

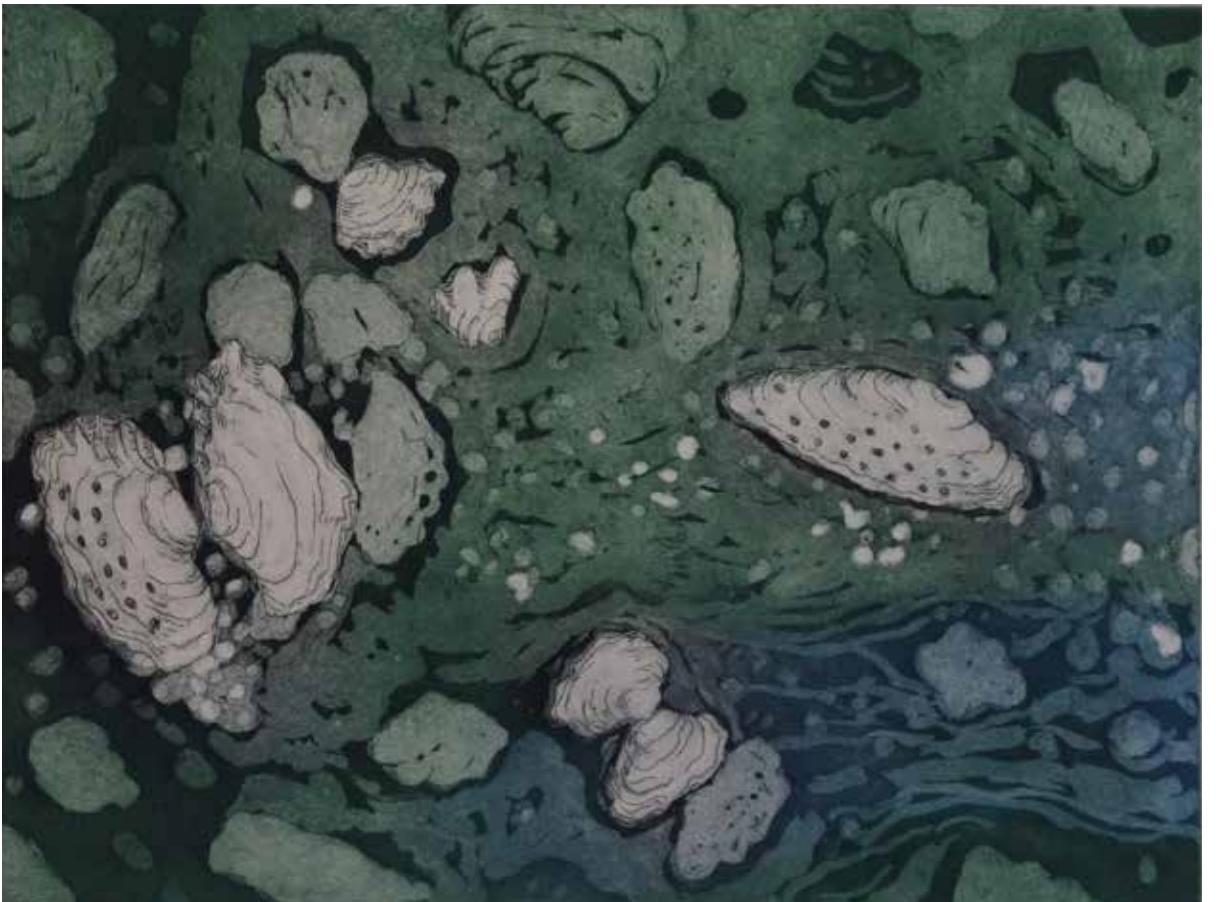
Sances' massive drawing is inspired by *Moby-Dick* and the history of whaling in America. The whale's skin is embedded with a visual history of American capitalism, images of human and environmental exploitation and destruction since 1850. The whale is a metaphor for survival, immortality, and a reason for optimism.



Jos Sances, *Or the Whale...*, Detail, 2018 – 2019, scratchboard, 14 by 51 feet



Jos Sances, *Or the Whale...*, Detail, 2018 – 2019, scratchboard, 14 by 51 feet

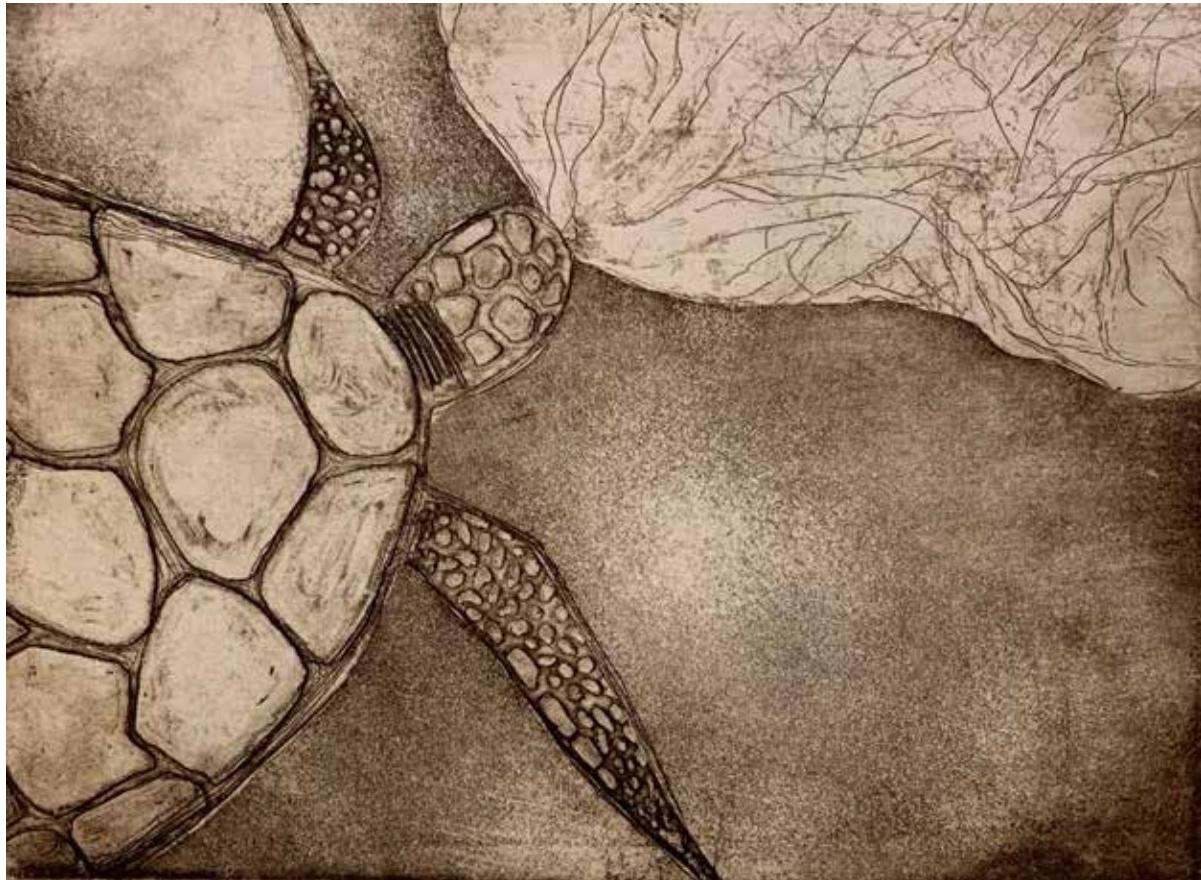


Diane M. Stemper, *Few Remain: Unionids*, 2019, etching with aquatint on Arches Cover. The etching is an image from a larger book project about freshwater mussels. Diane Stemper's 2019 artist book, *Mussels: What Was / What Remains*, was inspired by the current endangered species status of freshwater mussels and the Mollusk Collection at the Hefner Museum of Natural History, Miami University, Oxford, Ohio.

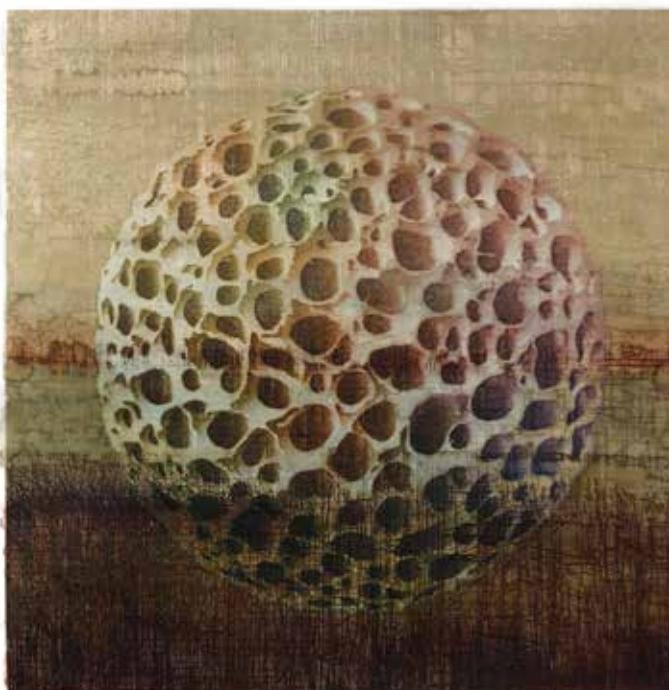


Jennifer Parker, *Coccolithophore*, 2019, water, calcium carbonate, spirulina (algae), and gum arabic, on paper

THE ALGAE SOCIETY is a global collective of interdisciplinary researchers working to establish a new community with algae as a non-human international research partner. As a working group we aim to collaborate, conceive, cooperate, and experiment with algae as a united society bound together in an interdependent system of organisms adapting to global warming. Our collaboration is a creative approach that seeks to benefit, support and educate the public of our symbiotic relationship.



Karen Baden Thapa, *Sea Turtle Eating a Plastic Bag*, 2019, etching



Donald and Era Farnsworth, *Glass Houses II, right panel (Actinomma Antarctica)*, archival pigmented inkjet print with watercolor on Arches hotpress watercolor paper

Actinomma Antarctica is part of Donald and Era Farnsworth's Glass Houses series depicting diatoms, a class of tiny, single-cell organisms found in nearly every body of water on Earth that build delicate shells for themselves out of silica. Diatoms are major sources of oxygen in our atmosphere and are estimated to be responsible for 25% of the carbon fixation (conversion of carbon dioxide to organic compounds) in the ocean. By enlarging these microscopic life forms and bringing them to the surface of their work, the Farnsworths invite us to consider both the beauty and the ecological importance of these otherwise invisible creatures.

## **WE GATHER AT THE GATE**

Melissa Tuckey

A hawk cleaves the air above Watkins Glen  
another train rattles the track above the gorge

Here where ferns lace columbine cliffs  
above the water's wake, where streams carve  
history into shelves of rock  
and all who feel the cold steel vibrate  
wonder about compression

Propane trucks hurtle two lane roads  
and I've got a tree planted in my heart

Stranded assets, blind thrust fault  
Salt mines beneath our sacred lake

## **SENECA LAKE**

Melissa Tuckey

Propane trucks idle  
one more hour, one more day  
daffodils in bloom

Crow caucus darkly  
awake as wind blows across  
hungry water

White waves blown sideways  
shiver of wind through maple  
an oriole sings

A child learning her  
letters, a hand-painted sign:  
*I am the lake I love*



Zachary Skinner, *Survival Camp with Water Collectors, Kale, and Oil Pipeline*, 2019, oil on canvas, 41 inches by 30 inches



Zachary Skinner, *Atmosphere Bubble and Ruins in a Dead Landscape*, 2019, oil on canvas, 43 inches by 36 inches

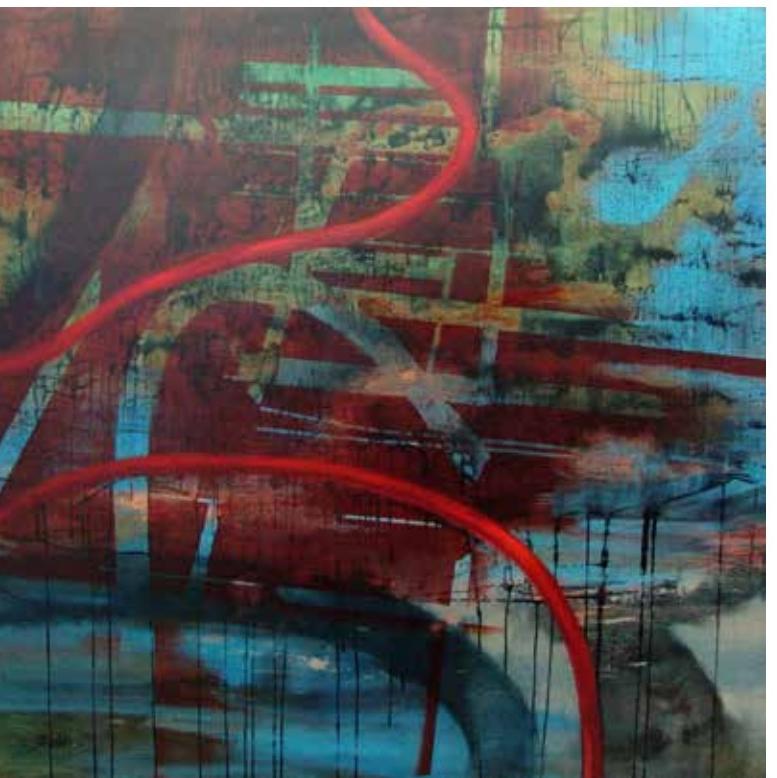


Zachary Skinner, *Flood Water with Water Towers and Hut-Raft*, 2019, egg tempera and oil on panel, 8 inches by 9 inches

Skinner's paintings reflect his conceptual interest in the Anthropocene landscape and geo-engineering. Some recurring motifs in his work are invented structures that interact with sunlight, wind, and/or rainwater, as well as inhabited nomadic huts—all situated within a barren landscape. His work presents a narrative of increasingly violent weather exacerbated by climate change, and the technological sublime—reflecting on the dangerously dysfunctional interdependence of man and nature. Skinner creates paintings that flow freely between authenticity and parody, fetishized forms and flatness, the Romantic sublime and the post-apocalyptic, invention and destruction.



Bernadette Howard, *Nightfall*, 2016, mixed painting media, pigments, on canvas, 30 inches by 40 inches by 2.5 inches



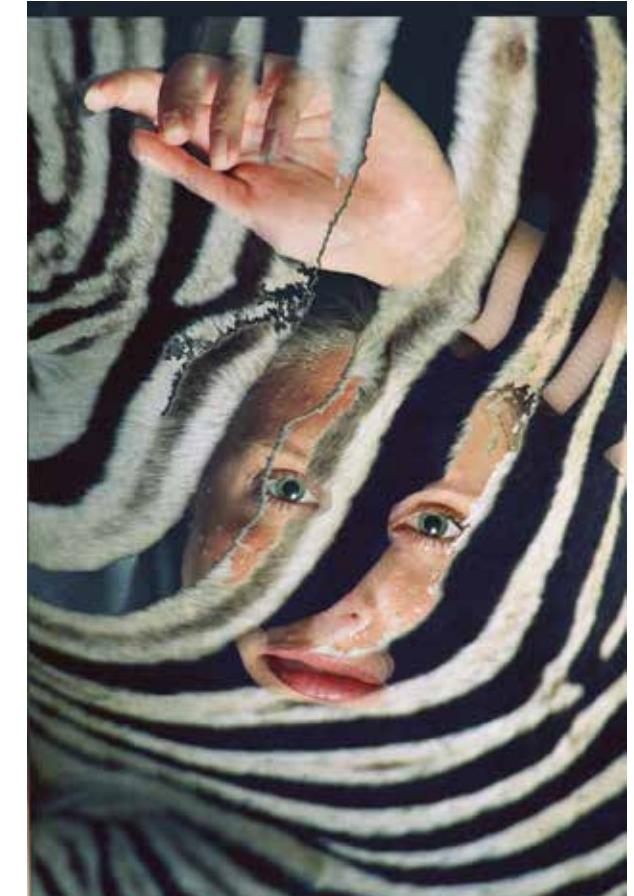
Bernadette Howard, *After the Rains No. 13*, oil and pigment on canvas, 48 inches by 48 inches



Eva Maria Horstick, *Our earth is leaking*, 2016, Ruhr area



Eva Maria Horstick, *If trees had dreams*, 2003, Spain



Eva Maria Horstick, *The lost connection between humans and animals*, 2003, Africa and Ruhr area, collage

## WAS IT I

Sheila Packa

who drank from  
the springs in the headwaters  
trampled tradition  
escaping the small town  
or the mine the men the thefts  
joined the union and strikes  
or swam through water-filled mine pits  
snuck past gates trains conveyors  
furnaces beer cans bottle filled weekends  
portaged through chains of lakes  
drifted through culverts below railroad tracks  
beneath the bridge of language  
inebriated no man  
no woman no grandchild  
of the Divide wanting  
lessons from libraries or schools  
that came down by arson  
not banker or engineer or driver  
of cars that rolled in the ditches  
not miner with cows or chickens  
or cats in the barn  
not the wife with the pressure cooker  
the gas station attendant or candy store  
not the owner or lifeguard or seamstress  
not husband or lover or lake  
who broke it off seeped in the ground  
evaporated  
got in the car and kept going  
through the streets of rain  
free love and tokes of weed and war

and war at the corner  
of a movie theater and real  
at the corner of never coming back  
of dawn and dead of night  
of erosion and accretion  
through lock and dam  
nervous breakdown and exhilaration  
listening to broken records old tapes new  
at the place where friends desert you  
through any channel on any road  
through the gutters and sewers  
not seeing stars for the light  
nor bounds because gorgeous  
unrestrained rides of your life  
are around the bend within reach  
effluence surging into waves on the beach  
moonlit white capped deep  
shadow and silver or tin or stainless  
lines lifting bending  
with roots that hold down a city  
or a country or the earth  
beginning -- beginning  
is the voice of sirens ringing in the places  
where towers have fallen  
lightning and flood  
search and rescue  
in the rising water broken city  
what I took for sunrise  
was dynamite

## KEG PARTY

Sheila Packa

*Nothing to lose anymore, comrade  
nothing to lose but our chains.*

—Joseph Kalar

One night, around a bonfire in a gravel pit  
near Biwabik, beer glowed with firelight.  
Music blasted through car speakers.  
It was getting cold beyond the fire.  
A river was falling over stones through Merritt Lake  
down through Esquagama that carried  
the moon into Superior. Clouds were scudding  
through the sky. The poets were quiet.  
All my life I had listened  
to the trains taking this earth away  
to the ships in the harbor to the steel mills.  
There was a story I'd heard  
about the underground mine  
and it's rats. Some of the workers  
tied string to crusts of bread  
and dropped them in the holes of the floorboards.  
This was a form of recreation.  
The rats took the bait  
and miners reeled them back.  
In the old days.  
Now we have open pits, taconite and big plants  
with rolling furnaces to make pellets  
from the grey dust, a breakthrough  
in technology. We emptied the keg  
peered into the walls of night and fell deeper.  
I brought up the word 'oubliette'  
a dungeon with the opening at the top  
the word with the same root as oblivion.  
No way out.  
Some wanted to get on at the mine.  
Some were going away if they could.  
Some were going to die young.  
Below the stars of the Big Dipper  
voices rose like effervescence or sparks flying.



## EDEN IN IRAQ: WATER EXTRACTION AND RESTORATION

Meridel Rubenstein

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The marshes in southern Iraq, formed by the Tigris and Euphrates Rivers, are home to one of humanity's oldest cultures. The Marsh Arabs developed their unique way of life around the resources of the marsh, once the third largest wetlands in the world. The Tigris and Euphrates Rivers cross on the eastern edge of the marshes at the Shatt al-Arab; this intersection is thought to be a possible site of the historic Garden of Eden.

In the early 1990s, Saddam Hussein's forces secretly drained the immense Southern Iraq wetlands,

to punish the Shi'a rebels hiding there. They transformed it into a desert, murdering tens of thousands of Marsh Arabs and compelling hundreds of thousands more to flee. Conflict and violence altered the Marshlands into a desiccated parcel, disturbing its ecological composition, and leaving detrimental vestiges that still pose serious challenges to its survival.

The efforts of Nature Iraq NGO, my Iraqi sponsor, to regreen the marshes and culture, are legendary. For those millions of migrants afloat in Europe today, the Marsh Arabs of the Mesopotamian marshes in southern Iraq offer a stunning example of a violently displaced people returning home to regreen and restore their desertified land.

In 2011, I initiated the Eden in Iraq Wastewater Garden Project. This interdisciplinary water remediation project in the wetlands of Southern Iraq, uses environmental engineering, art, design, and wastewater to make a restorative garden for health,



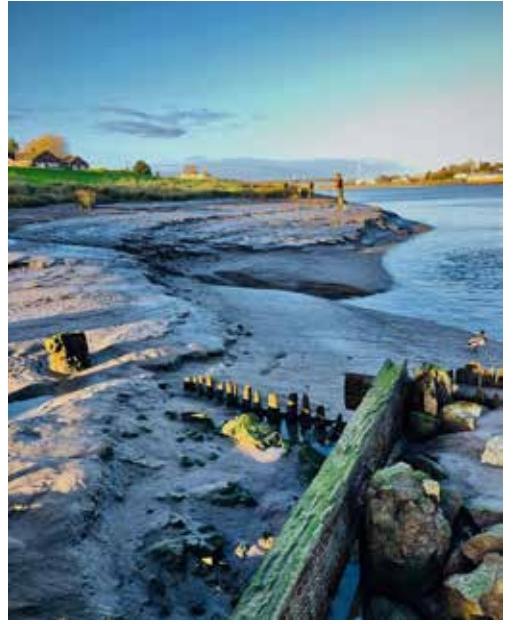
Above: Meridel Rubenstein, *In the Marshes*, 9 part work, S. Iraq, 2011–17; Left: Adam and Eve in the S. Iraq marshes, near the possible Historic Site of the Garden of Eden, 2011–2012, 34 x 59.83, UV-cured pigments on linen with wastewater garden drawing, 2017

cultural heritage, and environmental education. Initially funded in Singapore by a research grant from Nanyang Technological University (NTU) 2013–2017, in 2014 we became an official project of Nature Iraq NGO in El Chibaish, Thi Qar and Suleminiyah, Kurdistan. In April 2019, The Center for Restoration of Iraq Marshes and Wetlands (CRIMW) and the Iraq Ministry of Water Resources (MOWR) committed to funding this project in 2020.

I returned this last time to Iraq to find deep gratitude for our eight years of work and financial support at the National level in Bagdad. We were funded to begin building the wastewater garden this past winter. Just as we prepared to return, extraordinary popular protests erupted, followed by President Trump's reckless assassination of the Iranian General Soleimani. The Iraq government fell apart, so

we are now on hold until a new Prime Minister can be selected—allowing passage of a National Budget of which we were a part. Iraq is at a critical moment in its short and conflicted history. The disaffected and furious young are demanding untethered democratic governance with allegiance no longer to the U.S.A. or Iran. It's still unclear whether they can fully succeed. But huge changes are ahead.

My photoworks emphasize the resilience of the ancient marsh people and the environmental miracles taking place in the Mesopotamian Marshes. In the imagery, the effects of war, the oil industry, and agriculture are not ignored but are there as part of the ecologic and cultural fabric. These photoworks (2011–17) are printed with uv cured acrylic inks on linen, vegetable inks on prepared aluminium plates, or woven as jacquard tapestries with cotton threads.



Karen Frances Eng, Silt, 2019, images from a long-term photographic project documenting the dance between land and tides at the intersection of the Great Ouse and the North Sea

## SILT

Karen Frances Eng

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I live at the mouth of the Great Ouse at King's Lynn, a town in West Norfolk established in 1101. The Great Ouse flows here into the Wash, a square bay and estuary that opens into the North Sea. It is an important conservation site, designated for protection by multiple bodies, including RAMSAR and the Royal Society for the Protection of Birds. Lynn's position at the juncture of waterways between Europe and England made it the kingdom's most important port town in the 1300s, as it served as one of England's centres of commerce as a member of the Hanseatic League – a powerful trading alliance that linked 195 European cities including those in modern-day Germany, Poland, the Baltic states, the Netherlands, Russia and Belgium. It continues its maritime tradition as a centre for fishing and shipping.

Humans have drastically reshaped this part of the river over the centuries, starting with Dutch engineers who excavated it in order to drain the bog-

gy Fenlands to the south, reclaiming fertile land for agriculture. However, the coastal plains in this region live with the ever-present threat of flooding. Since then the river has been moved, contained and dredged in order to suit the needs of the time. Today, with the expectation of rising waters due to climate change, local authorities are considering building a barrage that will protect the town. Of course, this will come into conflict with the desire to preserve the ecosystem and landscape – the paradoxical position humans have put ourselves in when it comes to how we relate with nature.

For now, nothing will stop the wild forces of water here. Tides at this spot flow hard and strong, sucking water all the way out at low tide to reveal banks of shiny silt. This fine mud creates ever-changing shapes, sculpted by water flow and marked by birds' feet and stuck debris. I photograph the shape-shifting interaction of land and water as a daily activity, marvelling at – and taking comfort in – its endless transformation.



## THE SERIAL LIQUID EARTH

Ashwini Bhat & Forrest Gander

"The Serial Liquid Earth" is a collaboration between sculptor, Ashwini Bhat, and poet, Forrest Gander, meant to model the collaborative efforts necessary to address our epoch's great emergency: species extinction, desertifying landscapes, acidic seas, global warming. At this critical historical moment we've designated the Anthropocene, what we stand on ethically is inextricably linked to what we stand on physically. It will take our grounded understanding of what is at stake for us to imagine the kinds of collaborations that might lead toward a sustainable world of interdependencies.

IGNEOUS

They will slaughter you  
|  
pray for you and wish you peace  
|  
|  
but there is something  
/  
wrong with this



## EROSION

We wake, drunk.

\  
The planetarium  
\\  
locks into place  
\\  
under our hair; we take  
/  
the bus,  
| |  
neurons flicking out in pairs.



UPLIFT

You are entitled  
to be uncertain:  
swallow the Cambrian  
tongue, now crack  
the head crammed with teeth





Dahn Gim, <<Souvenirs From Earth: Black >>, 2019, Augmented Reality, Nylon, Plastic, Trash, 24 by 36 by 5 inches

## SOUVENIRS FROM EARTH (SERIES)

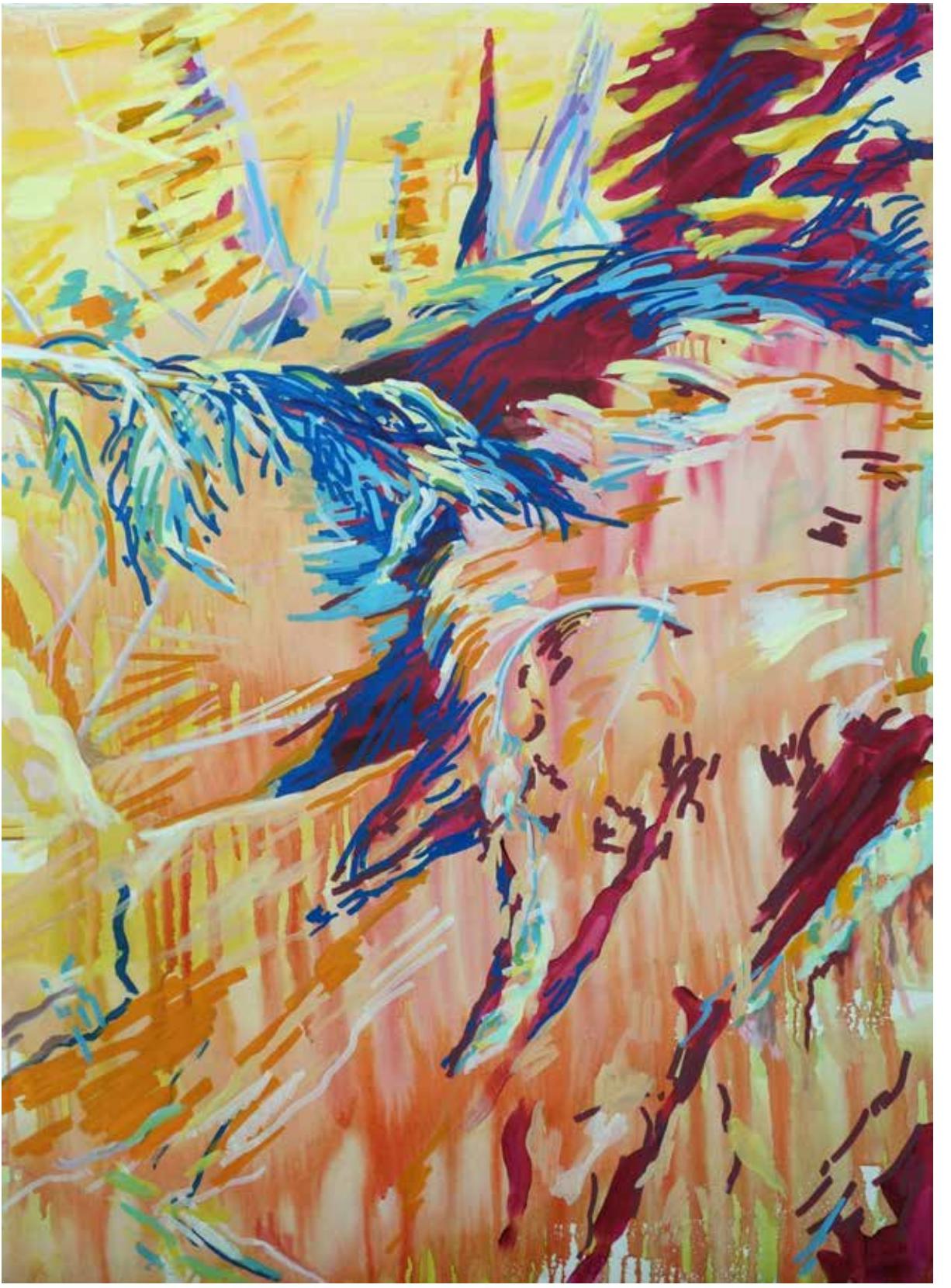
Dahn Gim

[WWW.DAHNGIM.COM](http://WWW.DAHNGIM.COM)

Dahn Gim's current series of sculptural work is an adaptation of the processes of collecting, re-assembling, and redefining discarded and found objects from her environment—from junkyards and curbsides, to the public parks and beaches of the city of Santa Monica. This collecting process, which also incorporates augmented reality, serves as a reminder of the excessive consumption of materials by human beings, and the billions of tons of waste that we carelessly dispose into the atmosphere, the oceans, and the land.



Dahn Gim, <<Souvenirs From Earth: Black >>, 2019, Augmented Reality, Nylon, Plastic, Trash, 24 by 36 by 5 inches



Above: Nikki Lindt, Forest Boreal Thaw Alaska, 2019, ink and acrylic on paper, 60 by 40 inches; Facing page:  
Nikki Lindt, Permafrost thaw Bog, 2019, Ink and acrylic on paper, 60 by 60 inches



## **PERMAFROST THAW**

### TUMBLING FORESTS OF THE NORTH

Nikki Lindt

[WWW.NLINDT.COM](http://WWW.NLINDT.COM)

*Permafrost Thaw, Tumbling Forests of the North* is a multimedia project exploring how recent climate change is contributing to thawing permafrost in the Arctic landscape. I have been studying and documenting landscape collapse due to permafrost thaw for several years at the Toolik Field Station in northern Alaska. While onsite I recorded the sounds of permafrost thawing. The vividly colored and expansive sketches and the entrancing sound of permafrost thawing stand in stark contrast to the ominously surreal destruction of the changing landscapes. Though collapsing, these places are still growing lushly but in strange new ways. This duality suggested by my work reflects the complicated relationship and struggle between the immense destructive power of climate change and the persistent nature of growth.

## HOW MUCH I WANT YOU

Anna Yin

Green, how much I want you green.  
Great stars of white frost  
come with the fish of darkness  
that opens the road of dawn.

—Federico Garcia Lorca

The North Star disappears tonight—  
How long fading? no one can tell...  
The city below busy with its contemporary complicity—  
cars and passengers streamline as in a dream;  
neon lights flash their false paradise.  
Red rebellion buzzes on my screen,  
sirens wailing.  
Flaming in this fever,  
I hear my own voice, frail and lean:  
*Green, how much I want you green.*

Green oak, green door,  
green park, green path,  
all are burnt by the fire...  
My lost people  
weep before the winter falls,  
weep before the vast cost.  
I wish the summer storms  
will slap hard on the land,  
soak-scalding the madly crossed  
great stars of white frost.

Truth, bleeding truth,  
not from the red book,  
not from the red oath,  
but from the throats that have been cut.  
My lost people  
fooled by the heartless,  
brain-washed,  
burnt-muted,  
living in the red starkness,  
*come with the fish of darkness.*

Come stars, come rain.  
Guide and cleanse  
our lost men!  
Awake us, shape us;  
help us grasp the green peace.  
Put thorns on our crown;  
through the furious fire  
compass us with the lion's mane.  
Take us to the green lawn  
*that opens the road of dawn.*

## GREEN

William Heyen

I could easily have been translated into the next dimension—lightning,  
the ground sated, the wind

blowing arrows down around me from dead ash—but I kept sawing,  
kept stacking

because the emerald ash borer came at us fast here in Seneca country,  
I'd seen larvae

surfacing from bark, & then the jewel stage, trees sucked dry  
by the Asians

against which you can pay mucho green for injections of poisons  
to save a tree or trees,

but what's the use? I bitched, I lamented, I counted, I accepted the perfect  
invasive species

who had no natural enemies here, who moved west across America, who maybe  
will mutate & return

for our maples, oaks, catalpas, spruce—I kept sawing, kept stacking,  
the grass blew green,

the sun went green, limbs fell in green light, my brain strobed  
metallic green, I sawed.

published in Windsor Review Volume 51 No. 2

## SHEARD'S QUARRY

David Annwn Jones

Colourless, translucent,  
pass through a silica star:  
a powder of edges  
stings the eyes:  
six-sided prisms whirling,  
seething through each other.

Somehow, in Roussillon's  
ochre quarry, red changes  
to pale and I'm back  
in the sand quarries  
of Cheshire, playing after  
the trucks fall silent.

They've heaved acres  
out of the recumbent dark.  
Stepping down into it,  
Simultaneously I'm  
outside to the wide air  
open, and intimate

as if in a room  
where sand-grains  
ease and quieten  
underfoot, familiar  
as a skin I shrugged off,  
now re-discover.

I have been here all along  
for sixty years, without knowing.  
The birds seem careful  
about themselves  
in the few trees  
around the rim;

all that moves here,  
this surface accepts their patterns  
and sets them into a circle of crystals.  
We have come back  
in a mirror made by no man  
it is time to recover.



Sara Mast, Wound



Sara Mast, North Star



Heidi Gustafson, Coastal Washington, geologic exposure documenting 200,000 years of glacial movement and major climatic changes



Heidi Gustafson, Ochre pigments gathered from Coastal Washington geologic exposure shown in image on facing page. Minerals include: magnetite (black ochre), vivianite (blue ochre), hematite (red/pink ochre), goethite (yellow ochre), glauconite (green ochre), mineralized peat, and several other glacially distributed clays and sediments.



Andie Thrams, Field Studies No. 19, Naupaka, 2014

## ON CONSIDERING EXTRACTION

Andie Thrams

[www.ANDIETHRAMS.COM](http://www.ANDIETHRAMS.COM)

Ours is a profoundly difficult time, wrenching if one has a pulse that beats in harmony with any of nature's rhythms. As we plummet into a worrisome future, the concept of extraction holds disturbing resonance in resource and cultural spheres. How did we get here? What can we do? Can we avoid hopelessness? Does art matter?

### OUT OF THE GARDEN & INTO THE FIRE

"For some people, what they are is not finished at the skin, but continues with the reach of the senses out into the land... Such people are attached to the land as if by luminous fibers; and they live in a kind of time that is not of the moment but, in concert with memory, extensive, measured by a lifetime. To cut these fibers is to cause not only pain but a sense of dislocation."

—Barry Lopez

Earth has always been our Garden of Eden. We were never kicked out. We extracted ourselves from Paradise by embracing hierarchies, assuming ourselves superior to certain other humans and creatures, more important than rivers, oceans, and forests. This arrogance has separated us from the natural world and created a vacuum within which we have justified extracting Earth's resources in destructive and unsustainable ways. This is not an effective longterm survival approach. If we fail to reconnect ourselves to the Garden (our biosphere), we may find ourselves in a living Hell.

Much of Western art, technology, and religion reflect separateness. The grand landscape painting traditions of the West reveal a distant view, portraying nature as something other, an idealized or frightening world from which we extracted ourselves. We spend hours interacting with brightly lit screens, holding them between us and the world, finding them more seductive than the wildness of our real embodied selves. We are locked into technologies that burn fossil fuels, warming the planet and harming most lifeforms. How can one grapple with this?



Andie Thrams, Field Studies, Populus tremuloides, 2019

### THE NET OF INDRA

"...and take ourselves as no more and no less than another being in the Big Watershed."

—Gary Snyder

On considering extraction, I wonder what energies and actions can move us toward a sustainable and more compassionate way of being? I grapple with these fearsome times by exploring interconnection. This is where I know myself to be effective and hopeful.

Indra's net, an ancient metaphor in Hindu and Buddhist philosophies, describes the infinite interconnectedness and interpenetration of all beings in the universe. Contemporary science confirms this entwinement of life forms. Trees are connected to each other and other plants via vast networks of underground mycorrhizal fungi. Salmon DNA is found in coastal forest trees. Our bodies hold the cells of more "other" organisms, such as bacteria, than they hold of what we think of as "us." Slime molds, butterflies, fish, birds, whales, and likely all that lives is being scientifically proven to be connected to each other in fascinating, tangible ways.

### BACK TO THE GARDEN

"And we've got to get ourselves back to the garden."

—Joni Mitchell

When we reawaken our dormant awareness of connection to all lifeforms, it is harder to justify ex-

ploitation and mindless extraction. What rekindles connection? Here is one person's path.

Concerns about burning fossil fuels, greenhouse gases, climate change, plant and animal extinction, unsustainable mining, fisheries, and forestry practices are not new. When the first Earth Day occurred in 1970, I was a senior in high school becoming aware of environmental degradation. I have carried this increasingly alarming awareness throughout my life alongside the delight of artmaking adventures outdoors from Baja to Alaska. Grappling with this paradox has been my very own life-long zen koan.

I have found insight into this koan through painting and creating artist's books in remote forests. This work sustains my connection to the natural world, helps me deal with environmental angst, and brings me hope.

### WHY ARTIST'S BOOKS?

Starting with coloring books, and later sketch books and journals, I have delighted in sitting on the ground outdoors, drawing, painting, and writing on paper. Studies in art, natural history, and design at UC Berkeley led to work in illustration and graphic design in Northern California and Alaska. The natural history field journal tradition has inspired and generated a lifelong practice. For a long while, I thought of my journals as visual diaries and source material for studio work. I never considered them art.



Andie Thrams, *Birdsong, Redwood Mountain Grove, Hermit Thrush*, 2018

When I landed at San Francisco Center for the Book in the 1990's, to learn how to bind my own journals, I was introduced to the book as a handheld art form. This was a revelation, expanding how I thought about field journals. Soon after, the Sitka Center for Art & Ecology offered sanctuary for creative exploration. During a four-month art residency, I hardly used the provided studio. Instead I worked daily in the surrounding coastal rainforest, rain or shine, on unbound field journal pages. My studio was the forest, and the artist's book was becoming a resonant form.

Many aspects of the book form suit me. Folded or rolled sheets of paper are easily tucked into a pack or kayak. The materials I use, watercolor, ink, and gouache, are lightweight and also easily transported, allowing me to work in remote places. Moving through the pages of a book is like walking into a forest. One must enter in and move through to explore a book's content or wander a path. I find technical and spiritual resonance in illuminated manuscripts—the way a book of hours marks everyday sacredness—and in the accordion-folding screens used as alter pieces in Shinto shrines.

My field journals evolved into one-of-a-kind artist's books, made mostly outdoors. They hold drawn and painted imagery, often with hand-written text addressing environmental grief and natural history observations. Painting, walking, drawing, meditating, and observing nature are inseparable aspects of my practice. I trek into wildland forests on foot or by kayak for hours, days, or weeks. During these sojourns, I sit on the ground, next to trees and other

plants, sometimes beneath a tarp, and work in response to each moment, clouds, plants, birds, animals. I invite the unpredictable in by painting with local river, lake, or sea water; allowing found bark, leaves, soil, sap, and fungi to mark the paper; setting work out in the rain; drawing with forest charcoal; painting with found twigs dipped in ink. The artist's book has provided a form to chronicle experiences of reverence and connection to place.

#### FEELING SMALL IS A GOOD THING

*"I'm a little beast in a big, big universe."*

—Hushpuppy, in the film  
*Beasts of the Southern Wild*

I often work alone, and can feel very small, even as prey, but not without power. Feeling small creates attentiveness and a healthy sense of not being the center of the universe. I am but one tiny thread woven into a vast network, as the Net of Indra and the science of ecology declare.

Many experiences of powerful connection have happened while working alone: crossing paths with a swimming bear while paddling my kayak across a deep fjord in Prince William Sound, wandering through dense wildflowers in the Brooks Range to find myself face to face with a golden-eyed wolf, painting in a blueberry thicket in Denali National Park while caribou walked so near I could hear the clicks of their ankles, and receiving late afternoon visits from a pygmy shrew while painting in Glacier National Park. One of finest moments was



Andie Thrams, *Field Work, Kenai Fjords*, 2017

with a bear in a backcountry sequoia grove in Sequoia National Park who calmly but persistently approached my painting spot till I had to retreat to a nearby tall boulder—with my food in tow, but not my art supplies. This bear proceeded to gently bite into my plastic ink bottle, so carefully that she left tooth marks, but no punctures. Why did she do that? While exploring my art materials, she paid no attention to my repeated loud pleas, "Hey Bear! Leave those art supplies alone!" Finally, when my soft spoken husband arrived, he suggested I stop talking mean to this tolerant and curious bear, and quietly asked her to leave my art supplies alone and go. Which she did, leaving no damage behind. I still have that ink bottle.

These experiences and that bottle remind me I am a small creature woven into beautifully complex systems that include unknowable things. When I

carefully trace the edge of a leaf with pen and ink, and think I am the observer, other creatures see me, many I will never know of. Who is the observer and who is the seen? My awareness extends beyond who I perceive myself to be, and each mark draws the world more deeply into my being. A mutual interpenetration occurs and I am changed. Reverence and awe expands where our edges are; and this can alter how the world responds to us.

There is no end to my delight in being an embodied human in Earth's Eden. There is no limit to my love for the beauty

and mystery of life. This is biophilia, a word defined by Edward O. Wilson in his book, *Biophilia* (1984) to mean "the rich, natural pleasure that comes from being surrounded by living organisms." And yet...

#### SOLASTALGIA

Alongside all this delight and attentive observation lives great despair, for what is happening to our beleaguered planet can't be ignored. The more one experiences a profound connection to this Earth, the more painful is awareness of its destruction. There is a relatively new term for this particular despair. Solastalgia is a word coined by Australian environmental philosopher, Glenn Albrecht, to describe the unique emotional pain produced by environmental degradation impacting people in their home habitats. This is homesickness for places we can never



Andie Thrams, Field Studies, Enchantment, 2019

experience again, for flowers that no longer bloom where we saw them before, for old growth forests where we wandered, now gone, the open pit mine scarring the wide open spaces where we once stargazed. This is the terrible pain of our times, and we ignore it at our peril. It is unbearable and paralyzing if we don't also experience sustaining connections to Earth and to each other.

#### A PATH

"Use what you have. Do what you can."

—Bill Stewart

What rekindles a connection to Earth's energies is unique and findable for all. If more of us follow a path that fosters connection, our extraction-based culture will diminish, and fewer of us will fall into despair. Delighting in the Garden is life-sustaining and where resilience to fix our dislocated culture and repair our planet can be found.

My path is making art outdoors, studying natural history, sharing biophilia and solastalgia through artwork and teaching. This work is my prayer for wildness on Earth and keeps me connected to the Garden and hopeful.

When we first go outdoors, I ask my students to leave their devices behind. What happens next always gives me hope. Invariably, after moments of

fidgeting, almost everyone of any age or ability, will sink into quiet wonder, listen attentively, jot down notes, trace a leaf, fall into the magic of now—available to us all the time, but often obscured by screens and feelings of isolation. It is so simple a thing: go outside and be still. It reconnects us to Eden and is always within reach.

I find solace believing my admittedly small acts matter, that these modest persistent efforts foster kinship and connection, even if for only a few, making a culture based on mindless extraction harder to accept.

#### BIOPHILIA

*"A walk through the forest strokes your fur,  
the fur you no longer have. And your gaze  
down a forest aisle is a strange, long  
plunge, dark eyes looking for home.  
For delicious minutes you can feel your whiskers  
wider than your mind, away out over everything."*

—William Stafford

Not sure what else to say here, I walk into the icy December morning. A cold sun streams through interior live oak and ponderosa pine, backlighting lichen-covered twigs and putting a dull sheen on manzanita leaves. I hear staccato chips from a ruby-crowned kinglet, chattering bushtits, the raspy-voiced oak titmouse, and raucous northern flickers. The air is calm

and carries the crisp scent of pine. I feel deep gladness and an impulse to trace all the shapes and patterns I see with pen and brush. Then, I cry.

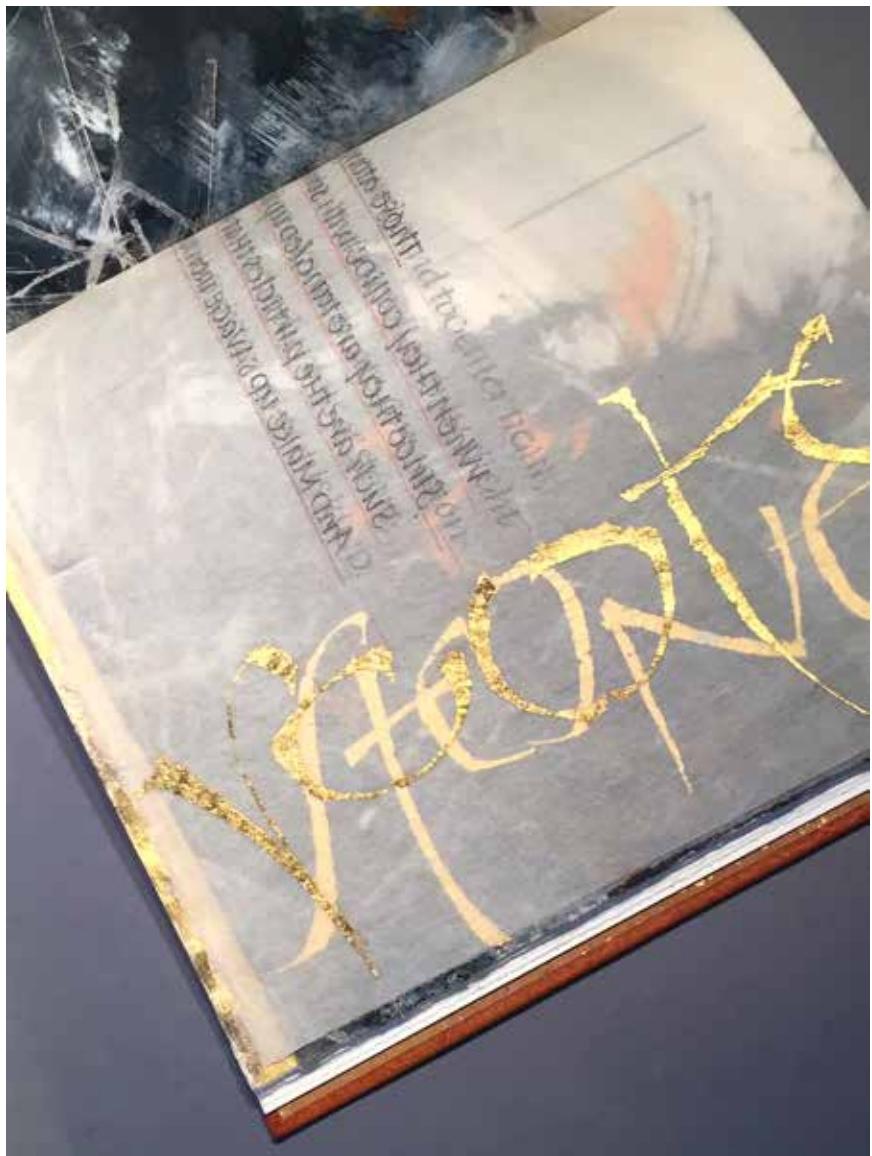
I notice dying needles high up in a pine and wonder: bark beetle? I know it'll all burn here, sooner or later (it last burned in the 1960s), and I worry we may be here when it does, or that we won't. I remember the wild delphinium, ginger, and tiny orchids I used to see in these woods, and haven't for a number of years. I am sad about neighbors cutting down everything that grows out of fear of fire. Why so few robins coming through this month, when we used to see hundreds each December? Are they just late? Are these "normal" fluctuations? Or more endless indications of the havoc we wreak?

I know I am part of what ails the Earth. My attempts to live mindfully don't make much of a dent. Still, I believe it matters if we try. So, I do. What we really need though, are fundamental changes to our social and political systems, with intelligent leadership willing to legislate sustainable policies. Seems to me voting is the single most influential act one person can take in the face of our culture of extraction. So, vote I will.

I'll also continue to experience and share the empowering feelings of solastalgia and biophilia, to feel it all and not forget what is happening. I'll try not to despair too much so I'll have energy to take action. And, for as long as I can, I will wander, sit quietly in wild places beneath giant trees, listen to birds, study and record as many shapes and colors as I can, and let every brushstroke weave me more deeply into my surroundings. I know feelings of separateness will fade, and a sense of wonder and reverence for our small planet will gladden my heart, and strengthen me for whatever is to come.



Andie Thrams, Field-Studies No. 32, River Dream, 2019



Suzanne Moore, Roots of Stone, 2017. Titus Lucretius Carus, Excerpt from The Nature of Things, 2017. Translation by A.E Stallings, 2007. Lucretius' first century insights regarding the question of origins, the nature of atoms, "the universe's rich variety" and the sacred nature of the earth we inhabit are timeless and compelling. He offers us a call to action, across the millennia.



Suzanne Moore, Roots of Stone, 2017. Titus Lucretius Carus, Excerpt from The Nature of Things, 2017. Translation by A.E Stallings, 2007



Full leather binding by Donald Glaister, 2017



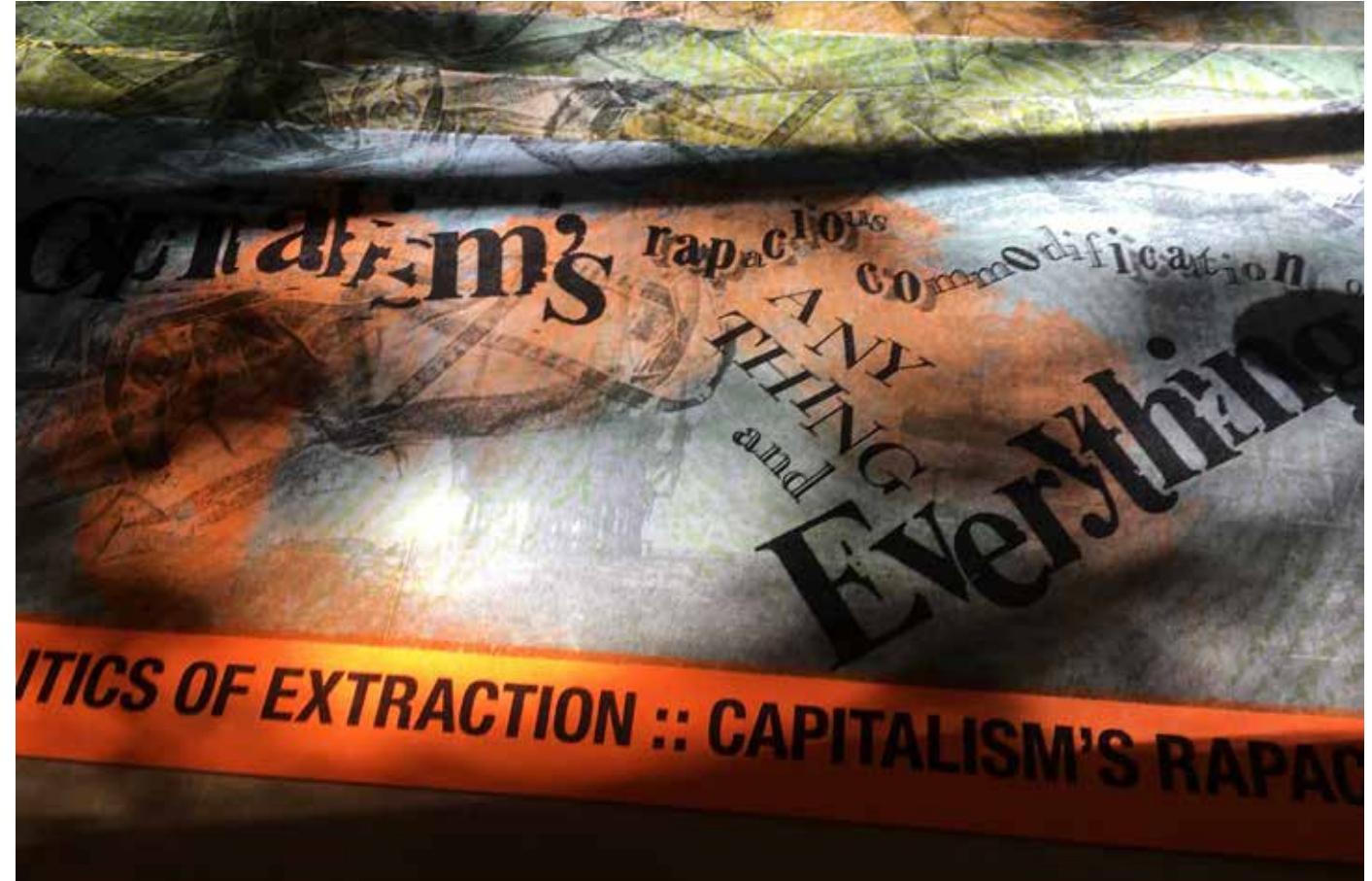
Robin Price, Witnessing a Dire Future: Cassandra, Rachel Carson, and our Contemporaries, 2016, mixed media on paper dipped in beeswax, gathered with linen cord and attached to board pedestal



Upper: Robin Price, Ecological Reckoning: the agave plant book (prototype for 2020 edition, shown with the artist), 2019, mixed media on paper dipped in beeswax with container created in collaboration with Daniel E. Kelm;  
Lower: Robin Price, Gather Courage, 2017, letterpress print with wood & metal



Felicia Rice, *The Necropolitics of Extraction*



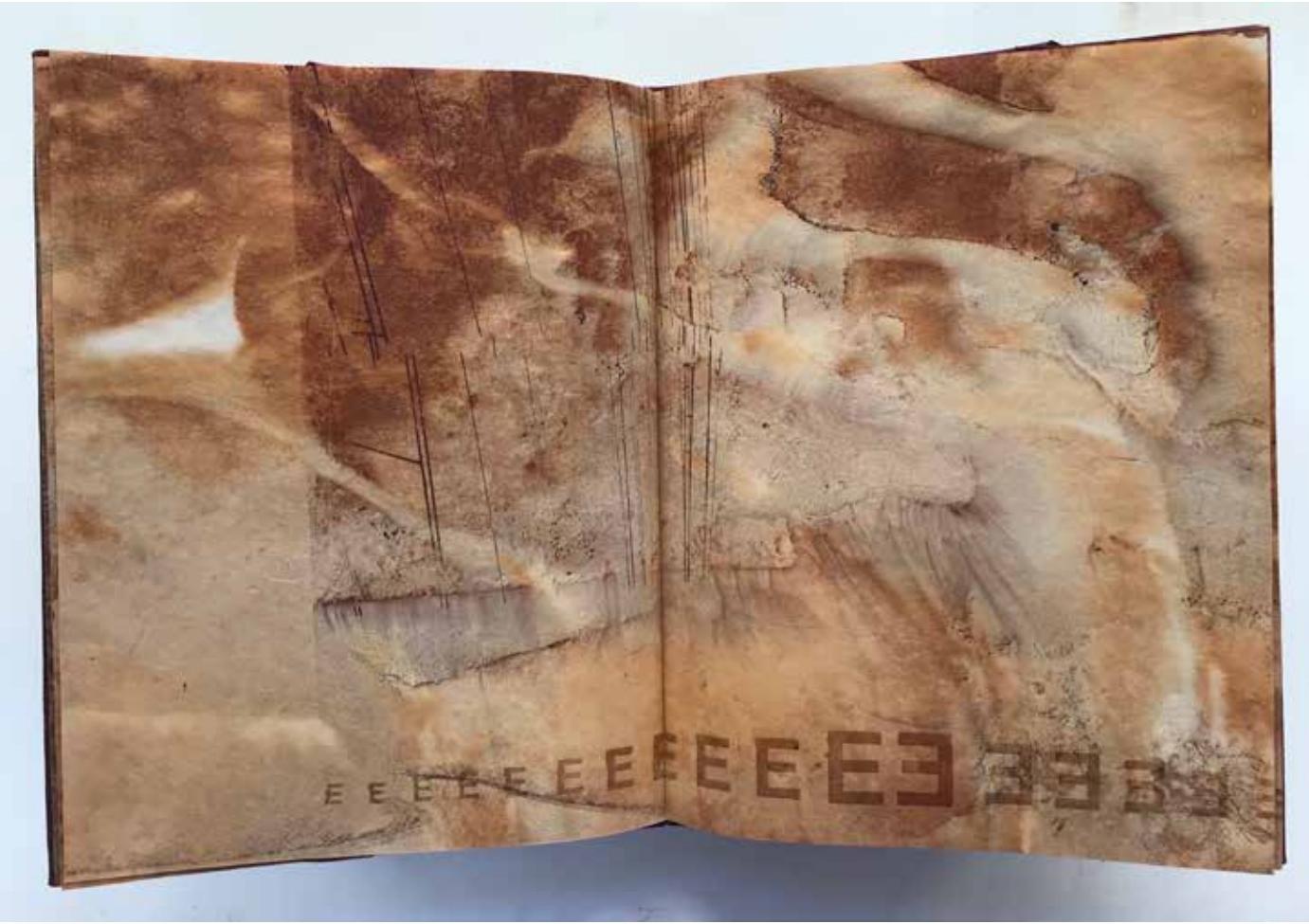
THE NECROPOLETS OF EXTRATION :: CAPITALISM'S RAPACIOUS COMMODIFICATION OF ANYTHING AND EVERYTHING :: COMPLEX CAUSALITIES AND EFFECTS OF GLOBAL EXTRACTIVISM :: EXPLOITATIVE INTERNATIONAL TRADE AGREEMENTS :: FINANCES OF DEBT SERVITUDE :: SACRIFICE ZONES GIVEN OVER TO RESOURCE MINING :: EMANCIPATION AND DECOLONIZATION :: MOVEMENT BUILDING AND SOLIDARITY WITH THOSE ON THE FRONTLINES OF OPPOSITION :: TO MAKE THE POSSIBLE GRADUALLY POSSIBLE, THERE IS NO OTHER CHOICE

the  
Necropolitics  
of Extraction

THE NECROPOLETS OF EXTRATION  
Text by T.J. Demos  
Bookwork by Felicia Rice

An edition of forty 9" x 11.5"  
accordion-fold books that extend to 17"

Moving Parts Press  
[movingpartspress.com/publications/extraction](http://movingpartspress.com/publications/extraction)



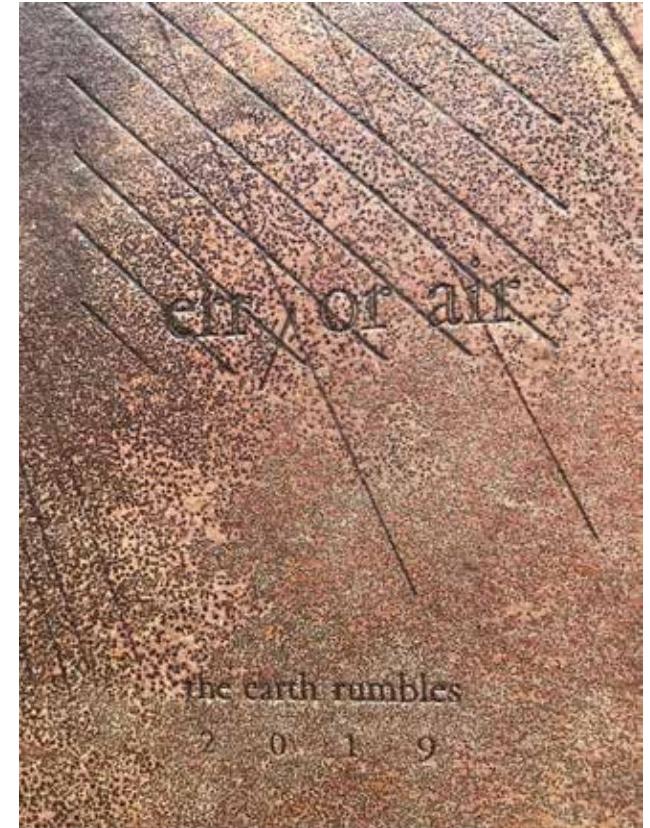
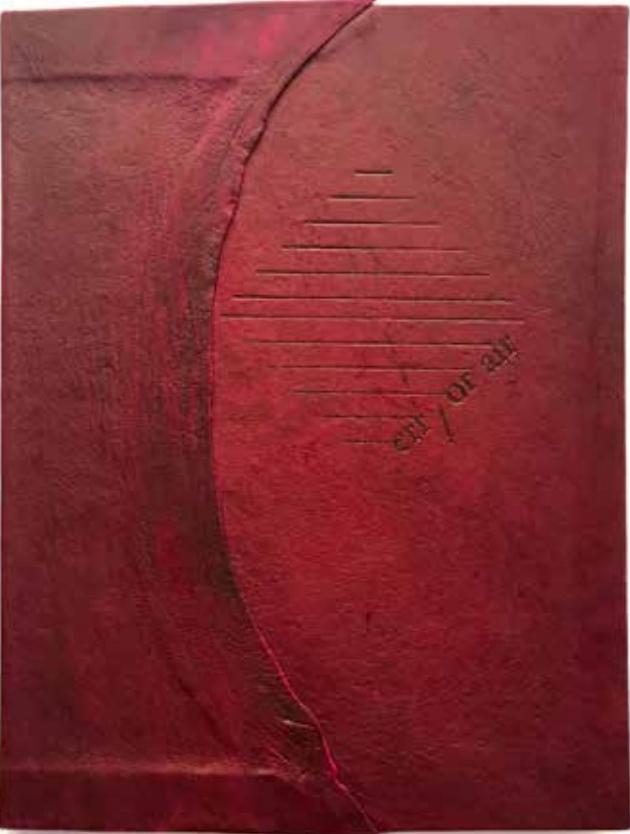
## ERR/OR AIR

Brooke Holve

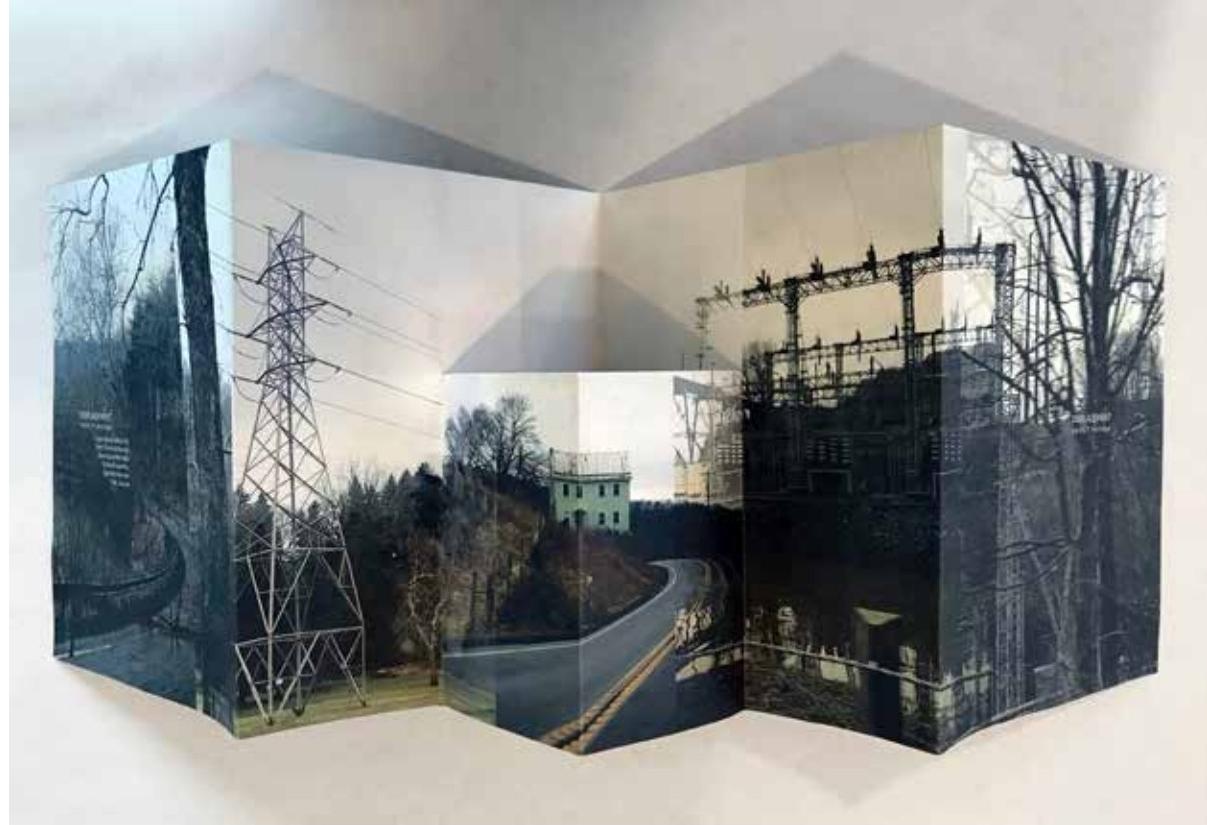
WWW.BROOKEHOLVE.COM

Brooke works to integrate process and material, her way of expressing content for the work. She often experiments using natural processes, subjecting materials to earth, weather, and other elements around, observing what happens with their interaction.

In *err/or air*, she works again with “In the Wave of the Father,” a poem she wrote and used to shape an earlier artist book, *Scrapped*. *err/or air* alludes to the “breaking down,” the part of a larger cycle of shaping and reordering the earth.



Brooke Holve, *err/or air*, Artist Book with Clamshell Box: letterpress, screen & xerox transfer prints on rust-stained kitikata paper, assorted papers, book board, New Zealand possum skins. 11 by 8.5 by .5 inches



Kathy T. Hettinga, *DISPLACEMENT*, 2018, artist's book, 8 by 6 by 0.5 inches closed, 8 by 24 inches open, archival digital ink, paper Mohawk Superfine, 100 lb. text, 80 lb. self-closing wrapper



Tracy Linder, *Pound of Flesh*, installation detail, 2019, Tracy Linder, leather, polyester resin, mulch



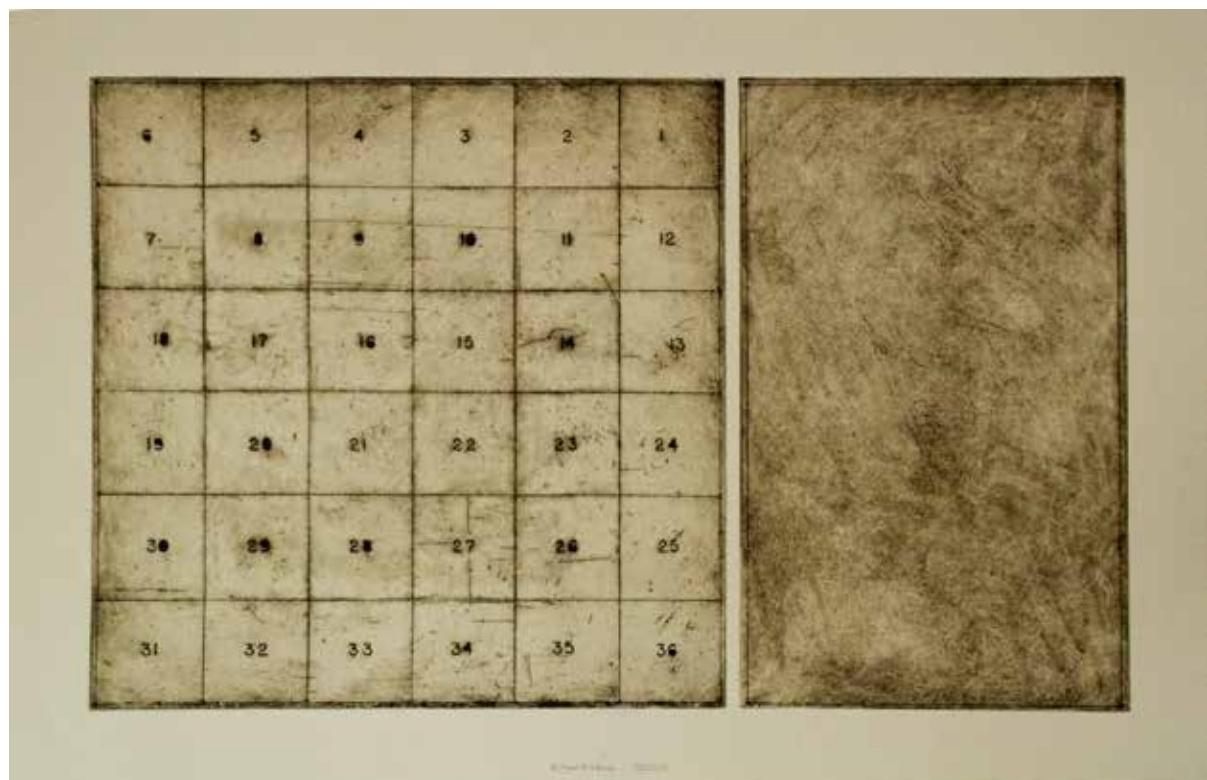
Tracy Linder, *Tractor Hides*, 1997–98, photo emulsion on animal collagen, polyurethane, steel rod, disc, light



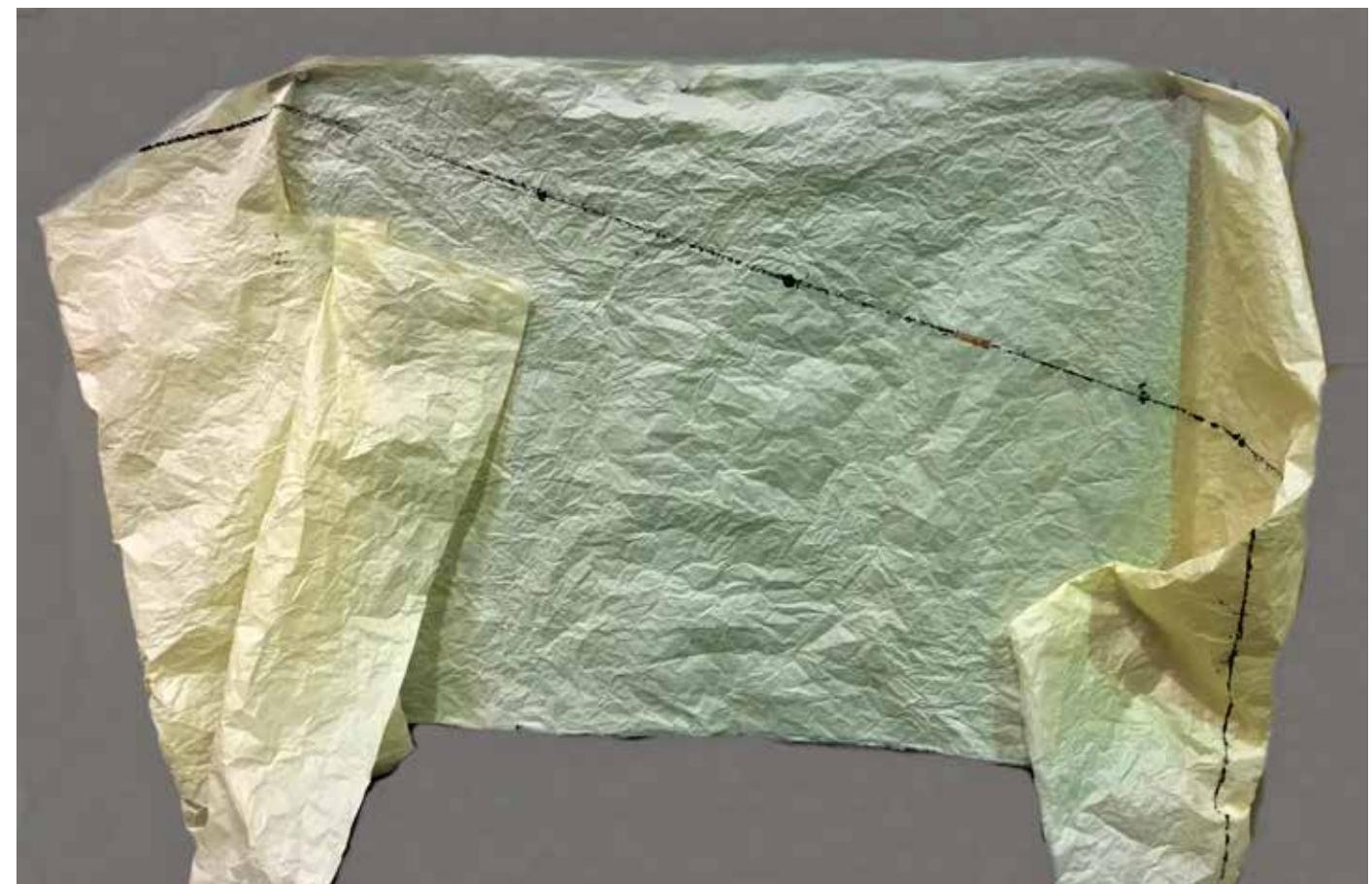
Brock Mickelsen, *Rewilding Silver King*, 2018, Scan of a 4 by 5 inch ambrotype. This image was created in collaboration with Silver King Lake, and our more than human siblings encircling him. If we are to serve as responsible stewards in the Anthropocene, we must relearn to listen with our whole being.



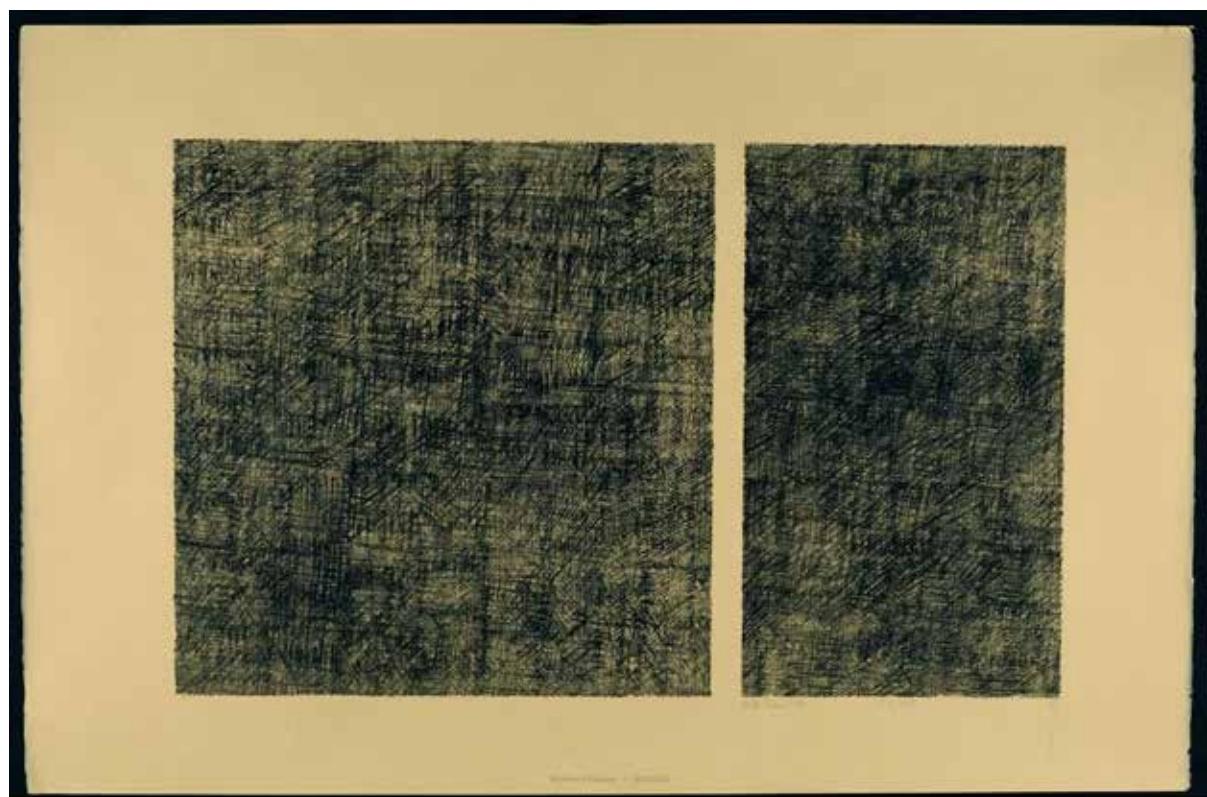
Brock Mickelsen, "Wild" Apple, 2018, Scan of a 4 by 5inch ambrotype. This image is part of an ongoing exploration into "wild" apple trees of the mountain west, an investigation in which the trees serve as segregate for discussing how non-native plants and people can become responsible members of more than human communities of place in the Anthropocene.



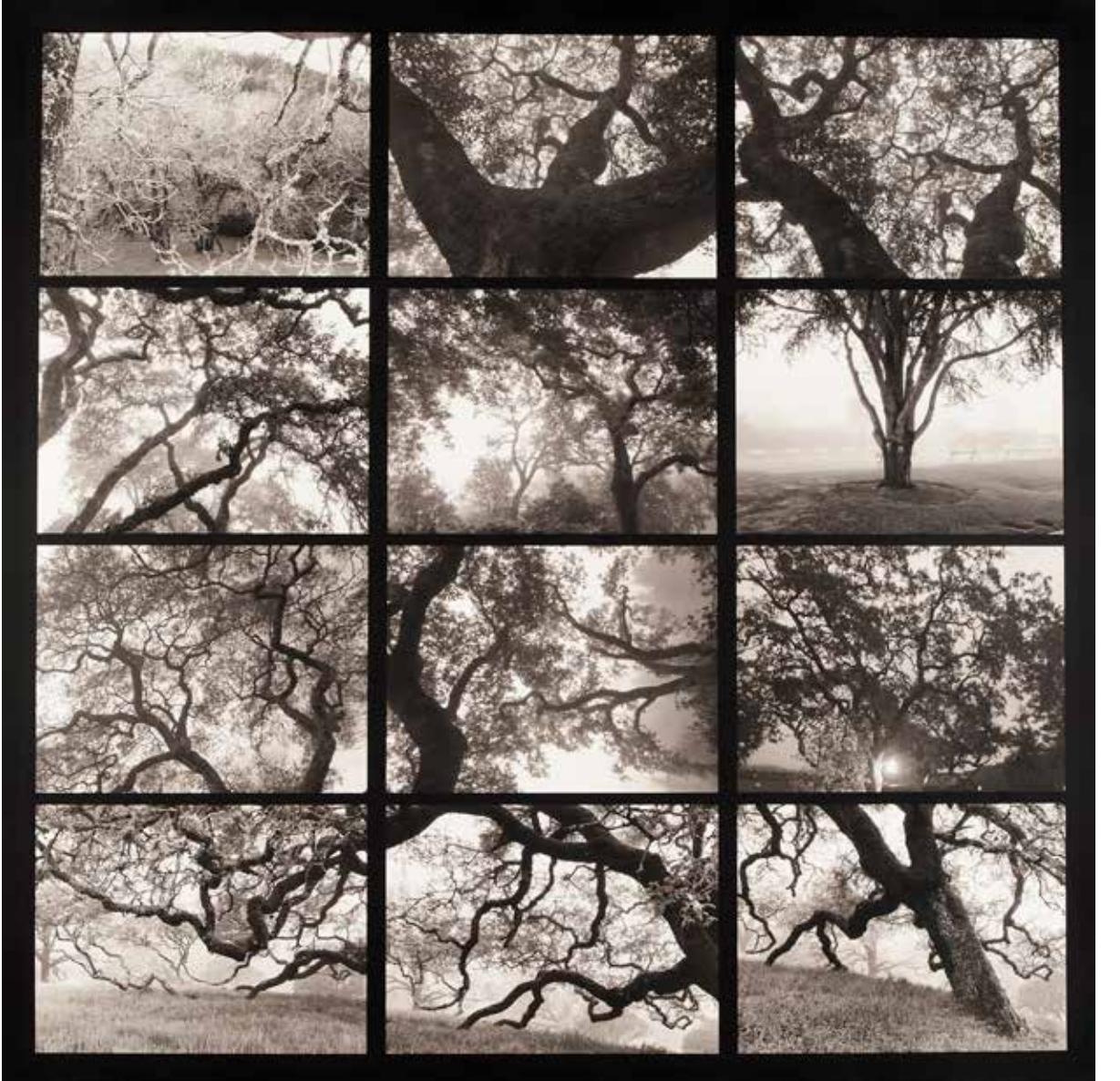
Steven R. Holloway, *Mapping the World* (Township and Range division of the western U.S.A.), etching, two matrices on Somerset



Steven R. Holloway, *The Gate at the Crossing at El Coyote on the Vamori Wash to Many Dogs Place* (USA-Mexican border North  $31^{\circ} 33' 31''$  West  $111^{\circ} 46' 57''$ ), inked string and letterpress on crumpled Kozo



Steven R. Holloway, *Milk River T&R* (Milk River and T&R, Montana-Alberta-Saskatchewan), lithograph on Kitakata



Above: Robin Dintiman, Annadel Oaks, 2018, Palladium Print. Right: Robin Dintiman, Close to Our Bones: Being, 2019, eucalyptus, fern, bamboo, trash, steel, eurathane industrial foam.

## DOWN INTO EARTH

Robin Dintiman

Departing, partly, uncomprehensible  
Sebaldian in it's penetrating Mourning,  
we are.  
Earth, our return to point of departure, vanishing.  
With awe, quaking our limbs apart from consciously  
knowing in the bones.  
We know, slipping on leaves comes tho.  
Solistalgia carves into the heart, a naming, aids the raw  
open wound.



## OUR BREATH

Christina Isobel

I walk in the silence of the trees  
A journey of the breath  
Into the heart  
Out to release—  
Moss growing up my ankles.  
One step, two  
Straight as trunks  
Branching from my spine  
Bark a cracklin'.  
Out the air goes  
Through my mouth—  
Curves in space  
Following currents  
Between two worlds,  
Mending the particular  
By connecting to the whole.  
Leaves a canopy  
'Round my shoulders  
Sticking out my ears.  
Now I know trees  
Are the lungs  
Of this world.



Left: Caroline Saltzwedel, Forest #1, etching  
Right: Caroline Saltzwedel, Forest #3, etching  
Images copyright Caroline Saltzwedel

## YOU ARE THE TREE

Nanette Wylde & Kent Manske

*You are the Tree* is an interdisciplinary, community-focused artwork by Kent Manske and Nanette Wylde commissioned by Fung Collaboratives for the Ark Kiosk in Redwood City, California (February 1 – March 8, 2020). The installation celebrates local labor while considering the linked histories of Redwood City, the San Francisco Bay Area and California as members of our shared global citizenry. The project juxtaposes the historical facts of the nineteenth century clear cutting of old growth redwoods from the Santa Cruz Mountains with the resultant development of Redwood City, both historically and currently, with emphasis on the contrast of disruptive innovations and resurgent interests in slow/by hand/craft industries.

Centered on the floor of the kiosk is a seven foot diameter replica of an old growth, coast redwood tree stump. The stump's multi-colored and highly textured bark alludes to the beauty and value of human and environmental diversity. Concentric growth rings are visible on the surface of the stump. Small flags mark significant disruptive innovation events which occurred during the last 400 years, the lifespan of the tree. A living redwood tree sprouts from the stump's center.

This handcrafted paper pulp structure was made from locally sourced, Redwood City, craft industry byproducts such as spent beer grains, eggshells, fabric scraps, flower parts, and hair. The twenty-five unique bark sections are tagged with legacy tree markers to identify both contributors and byproduct materials. Each section celebrates local labor and honors people who make things with their hands.

We live in a time of hindsight and nostalgia. The advancement of digital technologies and the way they have allowed us to see into and connect with the lives of others on a global scale, have something to do with this. Digital technologies have also changed

the way we work. Humans are makers—our cultural and evolutionary histories are based, in large part, on our physical labor and inventions. Today, many of us work in offices in front of computer screens. Today, many of the challenges of survival—which previously involved being out-of-doors navigating wild places—have been replaced with monetary and data systems which require navigating people in offices and structures of compliance.

When California was being colonized by the Europeans and European Americans, the prized resources extracted from her soils were, of course, gold, and also the seemingly abundant, excessively majestic, redwood tree. These are the two primary resource extraction industries that resulted in the development of Redwood City. Neither was sustainable. Although it brought new populations to California, the Gold Rush was relatively short lived at seven years. The nineteenth century extraction of the Coastal Redwoods resulted in the removal of 95 percent of these old growth trees in less than fifty years. Globally, old growth trees of all species are still at risk, but now more for the land they occupy than the lumber they provide. Today the prized resources extracted from our planet are hydrocarbons in the form of crude oil and gas. These run the global economy, and the rights of control over them is the stuff wars are made of.

Here, in 2020, we are able to see many of the effects of our past practices, and many of these are not positive in terms of human and planetary health. Our cities, and even our countrysides, are built from materials extracted from our earth. These built environments were not designed as self-sustaining systems, but rather lack stability, depend on continuous maintenance and are ever hungry consumers of energy creating resources. Our habitual natures and societally created beliefs encourage us to continue in lifestyles that we know are unhealthy for us, individually as well as collectively, and are unsustainable as we continue to deplete earth's resources. Invented needs and media induced presumptions allow us



Kent Manske & Nanette Wylde, *You are the Tree* (detail), 2020, community focused, paper pulp installation with legacy tree markers identifying local industry byproducts and supplier

to believe in our own absence of determinancy, and rights of privilege over the natural world. Our consumer demands discourage conservation.

Simultaneously, we are experiencing a resurgence of interest in and desire for slower lifestyles that involve the mark of the handmade. We are becoming aware of our psychological need as humans to be in wild places and away from our devices and plastic appliances. There are many things that feel empty or are just not as good when carried out by a robot, computer program, or artificial intelligence product than they are when made with human hands. We are drawn to nature as well as to the handcrafted, creative products of our fellow humans.

Redwood City is significant in the history of California because of its proximity to a variety of

exploitable natural resources, and because of its natural geographical features—it originally had a sizable navigable creek, Redwood Creek, and it is the only deepwater South Bay port. The rapid development of this region is based on natural resource extraction industries. It is these that prompted California statehood in 1850, and mass migrations to California which began during the California Gold Rush. People were looking for new ways to "make a living" and improved lifestyles. Speculators and investors were looking for wealth.

There were five natural resource extraction industries which influenced and prompted the development of Redwood City. The first was the California Gold Rush which began in 1848 and ended by 1855. In 1848 California's population was consid-



Kent Manske & Nanette Wylde, *You are the Tree*, 2020, Seven-foot diameter replica of an old growth redwood tree stump with 25 unique bark sections made from industry byproducts, living coast redwood tree

ered to be roughly 160,000 people, most of whom were Native Americans. At that time, California had just been ceded to the United States as a result of the Mexican-American War [1]. The Gold Rush brought an additional 300,000 people, mostly European Americans, but also people from other lands. These immigrants perceived California's natural resources as opportunities available to be taken.

The clear cutting of the Coast Redwoods began in the 1850s [2]. The Santa Cruz Mountains which extend south of San Francisco to Monterey Bay, were logged first from the east side. The logs were dragged by oxen down to Redwood Creek and then floated up to San Francisco via tidal action for use and export out to the world. This resulted in the development of the Port of Redwood City [3]. Once the forests on the east side were cleared, logging began on the west side. The majority of these trees were hauled up to the summit and then back down to the Port of Redwood City as this was easier than moving them up the coast to San Francisco via the ocean. Every old growth tree in the Santa Cruz Mountains would likely have been harvested if not for a group of concerned citizens who founded the Sempervirens Fund in 1899 [4]. Most of the Coast Redwoods that we see today are between 50 to 150 years old. The old growth redwoods logged in the nineteenth century were upwards of 2,000 years old.

Poison residue from mercury mining continues to be a critical Gold Rush effect in terms of human and animal health in the San Francisco Bay region [5]. Mercury was used in gold mining to separate the gold from sediment and rock. California was rich in cinnabar, a common mercury mineral easily identified by its red color. This discovery resulted in thousands of mercury mines. Many were located in the Coast Range [6]. Mercury enters the Bay from tributaries near the mining source as well as being carried down from gold mining sites in the Sierras. The single most significant source of mercury in the San Francisco Bay is the New Almaden Quicksilver mine, located near the Guadalupe River in the Al-

madén Valley, now a part of South San José. When mercury enters water systems bacteria transform it into a highly poisonous neurotoxin, methylmercury, which is absorbed by plant life and subsequently moves all the way up the food chain to human and animal consumers of Bay Area seafood. Mercury continues to enter the Bay from various watersheds, including the Guadalupe River. There are attempts to limit mercury run off and clean up the Bay, but legacy amounts (meaning that which entered the Bay during the Gold Rush) of methylmercury which remain on the Bay floor are continuing to erode and are impossible to clean up [7].

For thousands of years prior to the Gold Rush era the San Francisco Bay was rich with oysters, which were a food source for the Ohlone and Coastal Miwok people. Evidence of this were the existence of massive shellmounds throughout the Bay Area [8]. These ancient oyster beds produced a relatively small oyster which the new inhabitants of the Peninsula thought to be inferior in taste to oysters from the East Coast. Thus attempts were made to reseed the Bay's oyster beds with East Coast varieties. As Bay Area cities developed and the area industrialized, pollution, including raw sewage and massive amounts of sediment from hydraulic mining in the Sierras, resulted in oyster industry failure. In 1923 South Bay Morgan Oyster of Redwood City sold their holdings to Pacific Portland Cement (now CEMEX). Pacific Portland Cement began dredging the bay to remove the oyster beds, some thirty feet deep, to make cement [9]. The decimation of the oyster population and loss of reefs significantly affected local wildlife habitats and ecosystems. Currently, the California Coastal Conservancy with the San Francisco Bay Living Shorelines Project are working to bring back the nearly extinct Olympia oyster and restore its long-lost reef habitat in the San Francisco Bay. This is important as oysters are exceptionally effective water filters, when not overwhelmed by excessive pollution [10].

Salt extraction is another industry with a long history in the Redwood City area [11]. Significant environmental issues resulting from salt extraction have to do with the creation of salt ponds—the walling up of marshlands via built levees to prevent bay water in the form of tides from flowing in and out. This resulted in damage to tidal marsh ecosystems and bay wildlife [12]. It is estimated that 95 percent of the original tidal salt marshes were lost by 1990 [13]. Salt extraction is responsible for most of this loss. Tidal marsh restoration is a recent effort towards repairing Bay Area ecosystems [14].

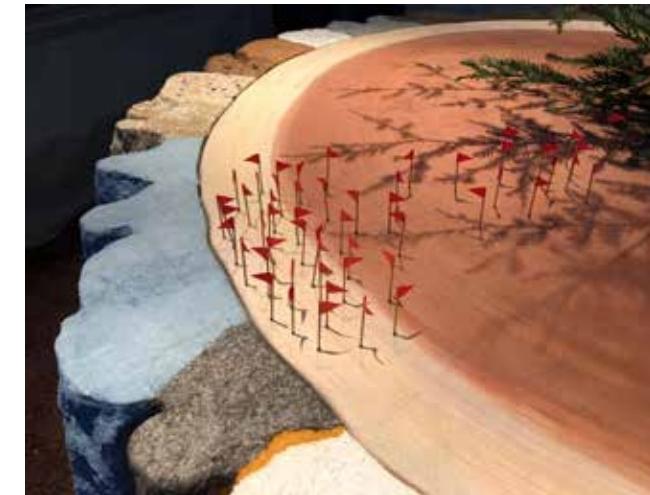
Hydraulic mining is an example of a disruptive innovation which took place in California in the 1850s. This technology replaced pick and axe mining by using water cannons to wash gold and sediment out of the mountains and hillsides. It was responsible for significant scarring of the Sierras and fill-in of the San Francisco Bay and the Bay's waterways. Hydraulic mining in the mid-nineteenth century required damming of small valleys in the Sierras for the purpose of creating a high pressure water flow. After pounding a targeted hillside, the water flowed down towards the ocean. The Sacramento and San Joaquin Rivers are part of this watershed. These rivers' ecosystems were damaged by gold mining runoff—mercury and silt—which filled in their beds and contributed to flooding in the Central Valley. Rock and silt from this 1850s practice continues to enter the Bay watershed [15]. The collective labor requirements of hydraulic mining also transformed independent gold miners into wage labor workers.

## CONCLUSIONS

One of the complexities of our current extraction-based culture is the relationship between issues of sustainability and the real need for human occupation, i.e. employment. Disruptive inventions such as artificial intelligence and robotic technologies compounds this human labor component as machines increasingly take on our previous physical

occupations. We see this most obviously in political discourse around jobs and employment as reasons to continue in destructive and often outmoded extraction industry practices such as the coal industry. At least, the employment language is targeted at the vulnerable working class voter. It is likely not the real motivation to keep such industries going. The real motivation is most probably corporate profit.

So we have a dilemma. Humans need occupation—physically, mentally, and psychologically. We have evolved thus. But the culture we have created and currently exist in removes “meaningful” occupation from many of our lives. Consumption practices may be a substitute for meaningful occupation. However, most consumption practices do not address, let alone resolve, our shared global challenges. Rather they exacerbate many of our real, as well as perceived, problems. Sustainability of life on this planet, as we know it, among them.



Kent Manske & Nanette Wylde, *You are the Tree* (detail), 2020. Flags on tree rings mark significant disruptive innovation events which occurred during the 400 years lifespan of the tree.

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## FOOTNOTES

[1] The Spanish began colonizing California in the 1700s. It became a territory of Mexico in 1822.

[2] Sequoia Sempervirens are among the oldest living things on this planet. They are also the tallest of trees reaching upwards of 379 feet and 29 feet in diameter. Their normal lifespan was between 1200 - 2000 years. They are currently considered endangered.

[3] Originally called The Embarcadero. Names in this region have changed many times over the course of Western settlement.

[4] The first protected grove was in Big Basin Redwoods State Park.

[5] Brilliant Earth.

[6] Only 12 percent of the 220,000,000 pounds of mercury mined was used for gold recovery. The rest was shipped out to Pacific Rim countries and western states. Alpers.

[7] Mann.

[8] Shellmound and Mound as place names continue in the Bay Area.

[9] “Pacific Portland Cement Company’s mill at Redwood City, which produces cement far in excess of a million barrels annually, utilizes seashell accumulations from San Francisco Bay as its sole source of lime.” Jenkins.

[10] Barrett.

[11] Various South Bay salt extraction industries ran from the current locations of the San Mateo Bridge all the way to the Dumbarton Bridge.

[12] Marshland, Salt marsh, Tidal marsh, Wetlands and Baylands are used interchangeably for this ecosystem.

[13] Clarke.

[14] Meadows.

[15] Romans.



Jacqueline Rush Lee, *Whorl II* detail, 2019, transformed book sculpture from "Whorl" Series, created in collaboration with nature, 8.5 by 7 by 5.25 inches

## WHORL

Jacqueline Rush Lee

[WWW.JACQUELINERUSHLEE.COM](http://WWW.JACQUELINERUSHLEE.COM)

Referring to the basic patterns of the human fingerprint, Whorl is a site-specific, time-based installation that works in collaboration with nature. The installation consists of a number of sites where found, aged, cut logs and residual tree stumps of varying dimensions have book forms inserted into the cavities, then later extracted as documents of change.

As iconic vessels of culture, knowledge, and classification systems, books are returned to their botanical origins and gradually subsumed by nature; positing how time, and changing weather conditions and insect activity affect the narrative of the original work.

Whorl reflects on both the interconnectedness and precariousness of our relationship between nature and culture; stimulating dialogue on how we leave our mark on nature, and how nature eventually leaves its mark on us as a larger, comprehensive system at work.



Above: Jacqueline Rush Lee, *Crowning Whorl*, 2016 to 2019, manipulated books, stump from "Whorl" Series, site-specific installation, University of Hawaii, Bamboo Breezeway, HI; Left: Jacqueline Rush Lee, *Penland Whorl*, 2017, manipulated books, stump (site-specific installation), 3 feet by 2 feet by 2 feet



Jacqueline Rush Lee, *Whorl*, 2015, transformed book sculpture from “Whorl” Series, created in collaboration with nature, 11.5 by 7.5 by 8 inches

564



Jacqueline Rush Lee, *Flesh Made Word*, 2018, transformed book sculpture from “Whorl” series, created in collaboration with nature, 6.5 by 5 by 6 inches

565

## EMANCIPATION PROCLAMATION

William Heyen

Whereas it minds its own business  
& lives in its one place so faithfully  
& its trunk supports us when we lean against it  
& its branches remind us of how we think

Whereas it keeps no bank account but hoards carbon  
& does not discriminate between starlings & robins  
& provides free housing for insects & squirrels  
& lifts its heartwood grave into the air

Whereas it holds our firmament in place  
& writes underground gospel with its roots  
& whispers us oxygen with its leaves  
& so far survives our new climate of ultraviolet

Whereas it & its kind when we meet beneath them  
shade our sorrows & temper our prayers  
& their colors evoke our dream of beauty  
from before we were born into this hereafter

We the people for ourselves & our children  
necessarily proclaim this tree  
free from commerce & belonging to itself  
as long as it & we shall live.

## THE WEB

William Heyen

I watched a wasp fight a spider whose geometric web encased honey-suckle leaflets.

The wasp shook far strands where it had landed & gotten caught,  
& now the spider  
rushed at it, they grappled, then separated. I couldn't tell if either  
had been wounded....

The spider retreated several inches, but fixed its eyes on the wasp  
which got further  
& further entangled until the spider attacked again—  
they were a nexus

of fury—but the web broke, the wasp rose, & either by nature's accident  
or design

carried the spider off to where an egg-laying wasp & egg-laying spider  
might colonize

another acre, or where one might kill the other, or both,  
or neither.



Ilja Herb, *The Fallen*

Removed from their intended industrial context of forestry, these chainsaws become more than old logging tools long since replaced by newer more powerful machines. The pastel background colors bely the brute force intrinsic to industrial logging operations, and their presentation could suggest an ornithological study or an insect collection. This lens playfully encourages the viewer to reconsider the importance of these machines as found artifacts that changed the physical landscape forever. These chainsaws, and others like them, were the tools that—for better or for worse—quite literally sculpted the physical landscape that surrounds us.



Ilja Herb, *Tree Circles CMYK*, C-prints

*Tree Circles CMYK* is a mixed-media exploration of anamorphic perspective and resource use. The images in this project are emphatically non-virtual—each circle of colour exists in the forests—but have been designed and executed to have the appearance of having been digitally created. Details in the 40 by 50 inch prints (Traditional C-prints) reveal the trees in the forest were in fact painted. Conceptually, I am interested in how this project allows me to explore perspective and authenticity in a physical, non digital, geographical sense. I'm using paint on the trees to bring a two dimensional form into existence in the forest. It is the photographs of each painted tree scene that complete each individual work.



Above: David Lauer, Ejido El Largo Maderal, Chihuahua. Despite climate change, harvests seem to grow every year. Organized crime is behind uncontrolled logging in the forests of the Sierra Madre Occidental and much of Mexico.

Left: David Lauer  
Cerro Prieto, Chihuahua, 2016.  
In 2016, after pillaging the  
forest, narco-loggers set fire  
to Cerro Prieto.



Top: Coleman Camp, Degracene II, 2019, silver gelatin with mordancage; Bottom: Coleman Camp, Degracene III, 2019, silver gelatin with mordancage; Left: Byron Brauchli, Development of Gated Community "The Flowers," near Las Trancas, Veracruz, 2014, copperplate photogravure.

## ON SOLASTALGIA AND TERRIBLE BEAUTY

Holly Downing

As a painter-printmaker, I'm at work on three distinct bodies of work for *Extraction: Art on the Edge of the Abyss*. The studio photos included here offer glimpses of works-in-progress.

The first series is a set of engravings, some of which will be included in an artist's book for CODEX 2021. The book will feature my hand-colored 3 inch by 3 inch mezzotint engravings of particularly beautiful examples of federally listed endangered insects—part of the “insect apocalypse.” Also featured are poems by Jane Hirshfield and book design and binding by Rhiannon Alpers.

In addition, I have an ongoing series of 8 by 12 inch oil paintings documenting prominent California fires that have touched my life in some way. I think of them as belonging to the artistic genre “Terrible Beauty.” I find beauty as a soothing balm in general, and also as an entry point whenever I am facing difficult realities.

And third, I've started a series of literally burned fabric or ashes (recovered in the aftermath of the Tubbs Fire). These charred materials are glued onto 12 by 12 inch canvases, and accompanied by equivalent sized trompe l'oeil paintings —facsimiles of the actual burned fabric or ash. For me these are visceral reminders of what we in Northern California have been experiencing in recent years with the warming climate.

In a crowded world with too much of everything, and particularly manufactured and plastic goods, I've intentionally made these projects small and handmade, with ties to the historic past. Their creation is an example of one individual's coping mechanism with “solastalgia”—that environmental despair so many of us are at risk of falling into.



Holly Downing and Rhiannon Alpers, *Vanishing, 2021*, artist book with 3-inch by 3-inch hand-colored mezzotint engravings



Holly Downing, *California Fire Diary Series*, No. 1–5, 2018–2021, oil on canvas, 8 inches by 12 inches. 2019's Kincade Fire scorched nearly 80,000 acres in Sonoma County, just two years after the deadly Tubbs Fire took out large swaths of Napa and Sonoma Counties. At the time the Tubbs Fire was considered the most destructive fire in California history, a record shattered only a year later by the Camp Fire in Paradise, CA, in which eighty-five people tragically lost their lives.



Mima Cataldo, Olea Hotel and Resort, Glen Ellen, CA, (after the Tubbs Fire), 2017



Mima Cataldo, Melted Playhouse, Coffey Park, Santa Rosa, CA, (after the Tubbs Fire), 2017



Mima Cataldo, Burned-out Trailer, Coffey Park, Santa Rosa, CA, (after the Tubbs Fire), 2017



Mima Cataldo, Found Pets, Coffey Park, Santa Rosa, CA, (after the Tubbs Fire), 2018



Leslie Van Stavern Millar, Illumination – Burnt Offering Series, 2018, Gouache on rag paper, 10.5 inches by 12.5 inches



The Burnt Offerings Series of gouache paintings were initially inspired by a fierce forest fire which burned through the Jocko Canyon in Arlee, Montana near my home in 2013. Shortly after the fire was rained out I hiked through the burn area. I had anticipated a tragically damaged, somewhat scary, landscape. Instead, I was surprised to experience an intensely stark sculptural beauty in the scarred earth and carbonized trees. I began Burnt Offerings the day after my hike and have been working on the paintings off-and-on since that time, finding in them a depth of expression and possibilities for imaginative myth-making. Tree of Life – Heavenly Visions (2019) reflects the current direction of the series, in which I am focusing on transformation.

Leslie Van Stavern Millar, Tree of Life – Heavenly Visions – Burnt Offering Series, 2019, Gouache on rag paper, 30 inches by 22 inches

## MY DEAR,

CB Follett

Every day I look at the news and see  
your country torn open. I see you  
in what's left of your house, your children  
hollow-eyed around you, uncovered  
against the cold. I see lines at the food stalls

that any moment may explode. I see  
those few coins tied in the corner of your  
kerchief and wonder when and how  
you will get more. I see your eyes  
hungry and suspicious. The dirt

on your arms means there is no water today.  
If I knew your name, if you had an address  
I would send you warm clothes. I would  
send you peaches; paper and pencils  
for the children. But I see only soldiers

with guns and thick boots. I see the corners  
where snipers hide. I see your face and wish  
I could hold you, lift you from the fallen  
stones, take you where beds are covered  
with clean sheets. Where the noises

in the nights are owls, not gunshots.  
If I could I would build you a road  
out of town, with a cart and donkey to  
carry the children. You could take your  
last pot and your grandmother's quilt.

If I could I would cleanse you  
of the splatters of fear, give your children  
books and hope. If I could, I would plant  
you a garden, knit your sons sweaters,  
brush your daughters' hair free of tangles.

Rain would come down again into your  
barrels, candles would never burn out.  
Somewhere together we would find your  
husband, bring him, safe and strong, back to you.  
The soldiers who shoot and rape would instead

rebuild your walls. We'd make a roof again.  
I would learn your songs and we  
would sing. The children would sing.  
The rivers would run clean and horses  
would again come down to drink.

"THERE ARE OVER 1000 URANIUM MINES AND MILLS ON THE NAVAJO NATION... BEFORE 1962, NATIVE AMERICAN MINERS WORKED IN THE MINES WITHOUT ANY PROTECTIVE EQUIPMENT AND LIVED IN HOUSES CONSTRUCTED FROM CONTAMINATED MATERIAL."

—MANUELA WELL-OFF-MAN





Above: Will Wilson, Mexican Hat Disposal Cell with Monument Valley on the horizon; Previous page: Will Wilson, "Rare Metals" Tuba City Uranium Disposal Cell, Tuba City, AZ



Will Wilson, United Nuclear Corporation's Churchrock Uranium Mill Spill, Evaporation Ponds. The July 16, 1979, accident remains the largest release of radioactive material in U.S. history, having released more radioactivity than the Three Mile Island accident four months earlier.

## CONNECTING THE DOTS POST-URANIUM EXTRACTION ON DINÉ LAND

Will Wilson

[WWW.WILLWILSON.PHOTOSHELTER.COM](http://WWW.WILLWILSON.PHOTOSHELTER.COM)

This project raises awareness about a critical opportunity for a just transition for the Navajo Nation. Connecting the Dots addresses remediation following uranium extraction that has poisoned the land and impoverished a people. I am creating an unconventional photographic survey using drone-based, aerial and app-activated photography to help Diné people re-story our narrative. My project presents a portrait of environmental and social injustice, but more importantly, shapes a platform for voices of resilience, wisdom, and vision for a transition to restorative systems of economy and memory making during the Summer of 2021.



Travis Wilkerson (Creative Agitation), *Our Past is Your Future*, 70 inches by 94 inches



Michael Light, 100 SUNS: 059 BAKER/21 kilotons/Bikini Atoll/1946, 2003, 20x24 pigment print, ed. 5.  
Images courtesy Euqinom Gallery, San Francisco



Michael Light, 100 SUNS: 057 BAKER/21 kilotons/Bikini Atoll/1946, 2003, 16x20, pigment print, ed. 5



Michael Light, Crater From 1952 MIKE Device, Elugelab Island, Enewetak Atoll, from BIKINI ATOLL 06.02.03, 2006

## BIKINI ATOLL 06.02.03

Michael Light

[WWW.MICHAELLIGHT.NET](http://WWW.MICHAELLIGHT.NET)

Due to sustained atmospheric American nuclear testing from 1946–1958, Bikini Atoll is so radioactive as to be uninhabitable today. The 1954 fifteen-megaton hydrogen bomb detonation BRAVO, 2.5 times as powerful as predicted, succumbed to fickle winds that blew the radiation debris cloud back over the Atoll and the surrounding area, creating the worst radiological disaster in the Nation's history. America's largest nuclear test, BRAVO's power equaled 1,000 1945 Hiroshima bombs.

Hand-made book of fifteen aerial and surface images shot by the photographer in 2003. Printed on Epson Enhanced Matte paper using archival Epson Ultrachrome 3 pigment inks, adhered with archival Gudy 831 double-sided pressure adhesive. Archival stability well exceeds c-print standards. Custom box by John DeMerritt Bookbinding, Emeryville, CA. Edition of ten, signed on rear cover.



Michael Light, Crater From 1952 MIKE Device, Elugelab Island, Enewetak Atoll, from BIKINI ATOLL 06.02.03, 2006



Michael Light, Bikini Island, Radioactively Uninhabitable Since 1954, Bikini Atoll, from BIKINI ATOLL 06.02.03, 2006



## HANFORD REACH

Glenna Cole Allee

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Hanford Reach is an art installation combining photography, sound, and video projection to “map” the Hanford Area: the Manhattan Project site in Washington State where plutonium was created for the Fat Man bomb dropped upon the city of Nagasaki in 1945, and where plutonium production continued for decades thereafter.

The vast zone of Hanford encompasses nine nuclear reactors, one still operating; a 20,000 year no-go zone; twelve thousand-year-old native sacred sites; a pioneer ferry crossing point, and evacuated townships and orchards. Part of this terrain was recently re-imagined as a National Monument and “wildlife reserve;” the Hanford Reach installation is named after this reserve.

The core of the installation is a surround-sound piece: a sonic collage. This piece was created from fragments of conversations recorded with residents of the areas surrounding Hanford, and those involved in and affected by the construction and operation of the site: elders of the local Wanapum tribe; displaced farmers and farm worker advocates;

nuclear engineers and radiation specialists; and “Downwinders:” those harmed by radiation within the long geographic “shadow” of Hanford.

The installation also carries the narration of a Hiroshima survivor of the Little Boy bomb blast, known as an “Hibakusha.” This interview is available to be listened to distinctly on a headset. The intention is to link Hanford site with the experience of those affected by the U.S. bombings in Japan, and to bridge these conversations across space/culture as an active demonstration that nothing can be permanently “contained.”

The sound collage is framed and anchored by mural-scale photographs that represent perspective views of Hanford site and surrounding regions. The full installation also includes a floor-projected video that cycles through maps of the site, of the “plutonium” railroads spanning the site, and of the subterranean chemical plumes leaching towards the Columbia River.

The Hanford Necklace/Atomic Necklace, a chain of semi-transparent photographs of the distinctive scars worn by cancer survivors affected within the expansive geographic “shadow” of Hanford, hangs in a suspended spotlit ring. This work connects survivors in a visual constellation, each scar-photograph, a personal testimony of injury, of survival,



Glenna Cole Allee, Photographs from the installation Hanford Reach

and of healing. The “Necklace” will continue to link and to lengthen, and perhaps becoming a global “Atomic Necklace” linking survivors from radioactive zones across geographic distances.

Hanford Reach creates a space in which fragmented narratives weave together and collide: a space offered to counteract historic legacies of silence and secrecy, to explore themes of denial, the contested nature of truth, and the manner in which personal life histories are embedded within large dynamics of state power.

This project will continue to evolve and the accompanying sound archives/interview files to grow. Parts of the installation show independently; choice/arrangement of work is site-specific.

Glenna Cole Allee with invited artists:

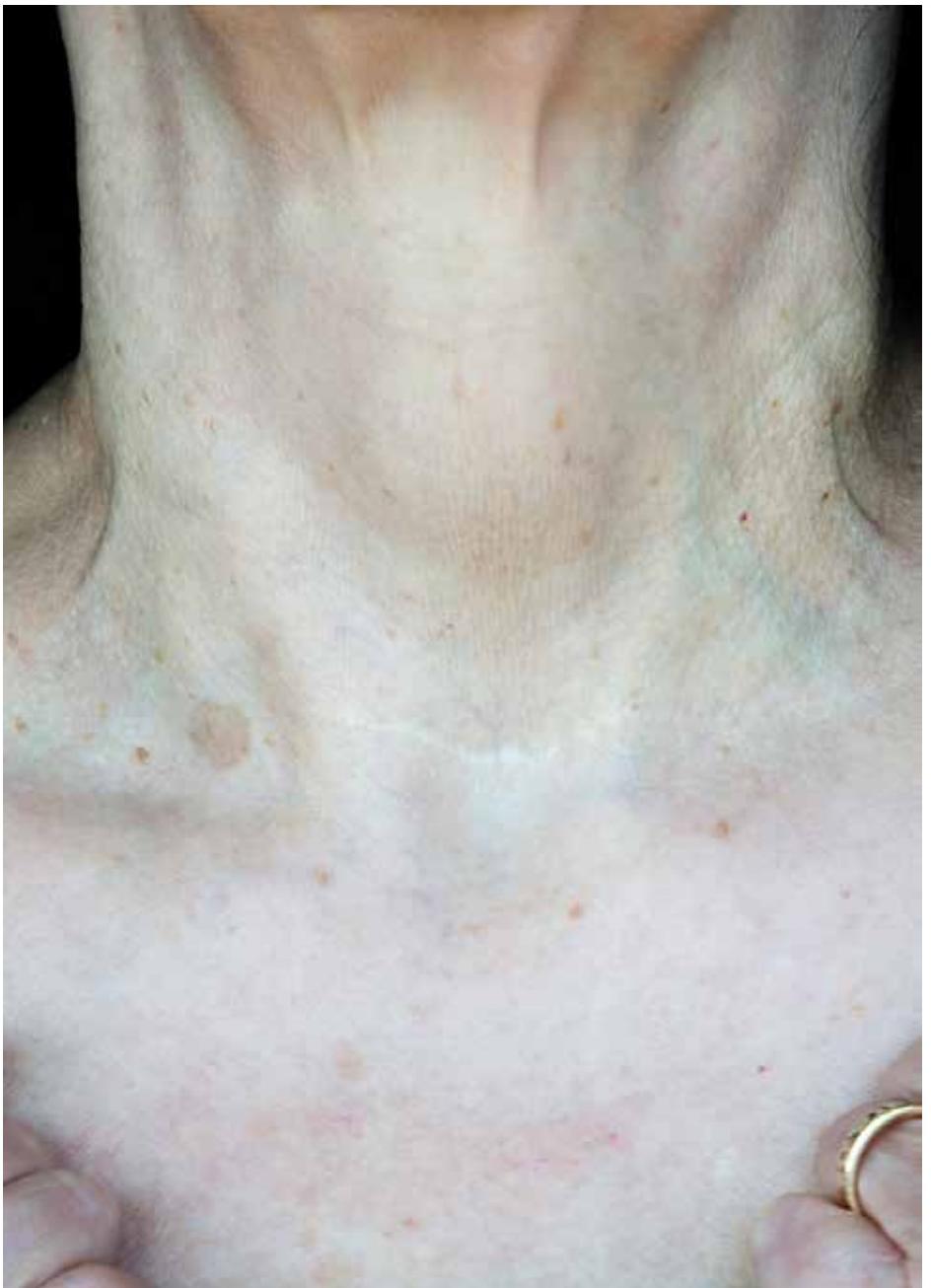
Jon Leidecker/Wobbly: sound design

Michael Paulus: videography

Thanks to Puffin Foundation and Puffin West for funding support of this project in 2016, 2017, and 2018.

## HIROSHIMA DAY ON THE KIM WILLIAMS TRAIL

David E. Thomas



Glenna Cole Allee, Image from the "Atomic Necklace"

"I always take this day off"  
Dunsmore told me  
a few years back  
we were painting  
his house  
on Addison Street and a day  
off  
sounded good whatever  
the reason  
he said he followed John  
Lawry  
in this tradition, a philosophy  
professor, Lawry had been  
a sailor  
in the navy  
on a ship off Okinawa  
when the bomb  
was dropped  
and he felt something deeply  
wrong had occurred  
many people did  
but the excuse  
that it shortened the war  
and saved lives  
stood  
not that it mattered  
to those  
incinerated  
in a flash  
to shadows etched  
on the rubble  
that remained  
in those grotesque after action  
photos  
the investigators took  
today the river

carries floaters perhaps  
ignorant of the entire  
war  
or at least indifferent  
or maybe they too  
celebrate  
and resist by simply  
enjoying  
an afternoon  
in the sun  
that for a brief moment  
was replicated  
in a blast of destruction  
from which  
there has been  
no return.

(in memory of John Lawry)

6 August, 2014  
Missoula



Karen Rice, *Transformer 1*, 2007, charcoal and dry pigments on paper, 36 by 42 inches



Karen Rice, *Transformer 2*, 2007, charcoal and dry pigments on paper, 36 by 42 inches



Tony Bellaver, *Resource Extraction No. 2*, 2019, Olympic Peninsula, WA, 17 by 17 inches



Tony Bellaver, *Resource Extraction No. 1*, 2019, Olympic Peninsula, WA, 17 by 17 inches

## ZONE ONE      CHERNOBYL

CB Follett

A cloud of radiation passed over our house,  
blew south, then the next day north,  
then south again.

I did not see it, although I was outside  
breathing in gulps of new April air.

Now our fields are bankrupt.

No one wants to eat the suspect beets.

No one walks in the forests.

Our children may never play there again.

The only birds they see are plastic.

The trees have drunk radiation, pith deep.

And stand forbidding like a wall of cactus.

We hide from rain and those of us who can  
send our children away.

We haunt the markets for food from other places,  
but little comes.

In the end we must eat local wheat.

But not milk or meat. So far, we don't eat them.

I have no appetite now. My bones and muscles  
are losing their will. They tell me  
my organs are rebelling.

My daughter lives with my brother in Moscow,  
my sons far away with their grandparents.

I try not to complain or blame.

What good would that do? But sometimes,  
I cannot get medication. The needles are old  
and blunt. Contamination is a realized fear.

And, over and over,  
why didn't they tell us?

I feel sadness that we can no longer  
pick the mushrooms, or berries from the bush.  
I suppose in time, we must, we will.



Vladimir Zimakov, Chernobyl Aftermath 1, 2015, charcoal on paper



Vicky Sambunaris, Untitled (Uranium tailings clean up), Moab, Utah, 2016, C-print



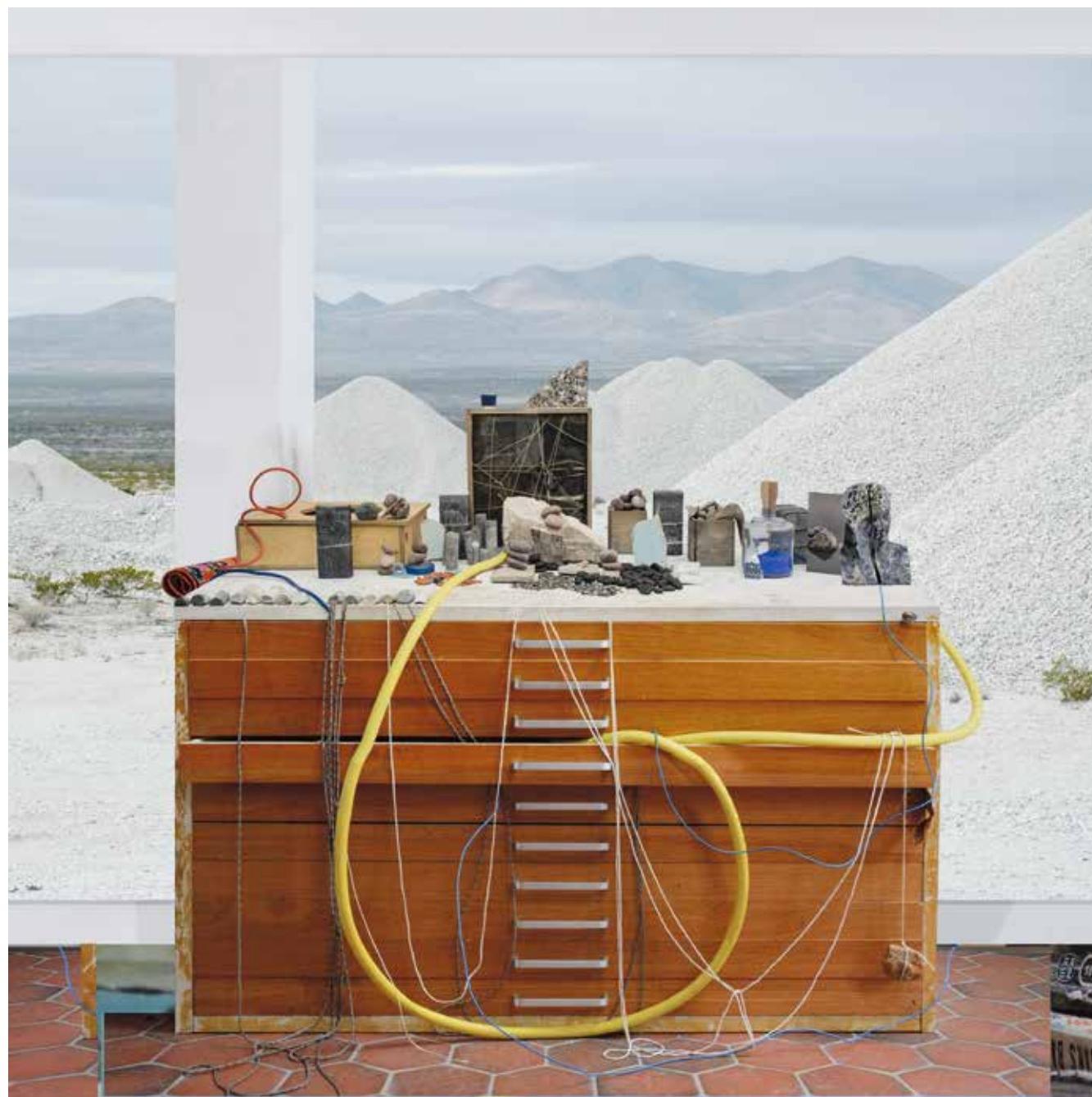
Eve Andrée Laramée, Mount Taylor Uranium Mine, New Mexico, 2007, photograph



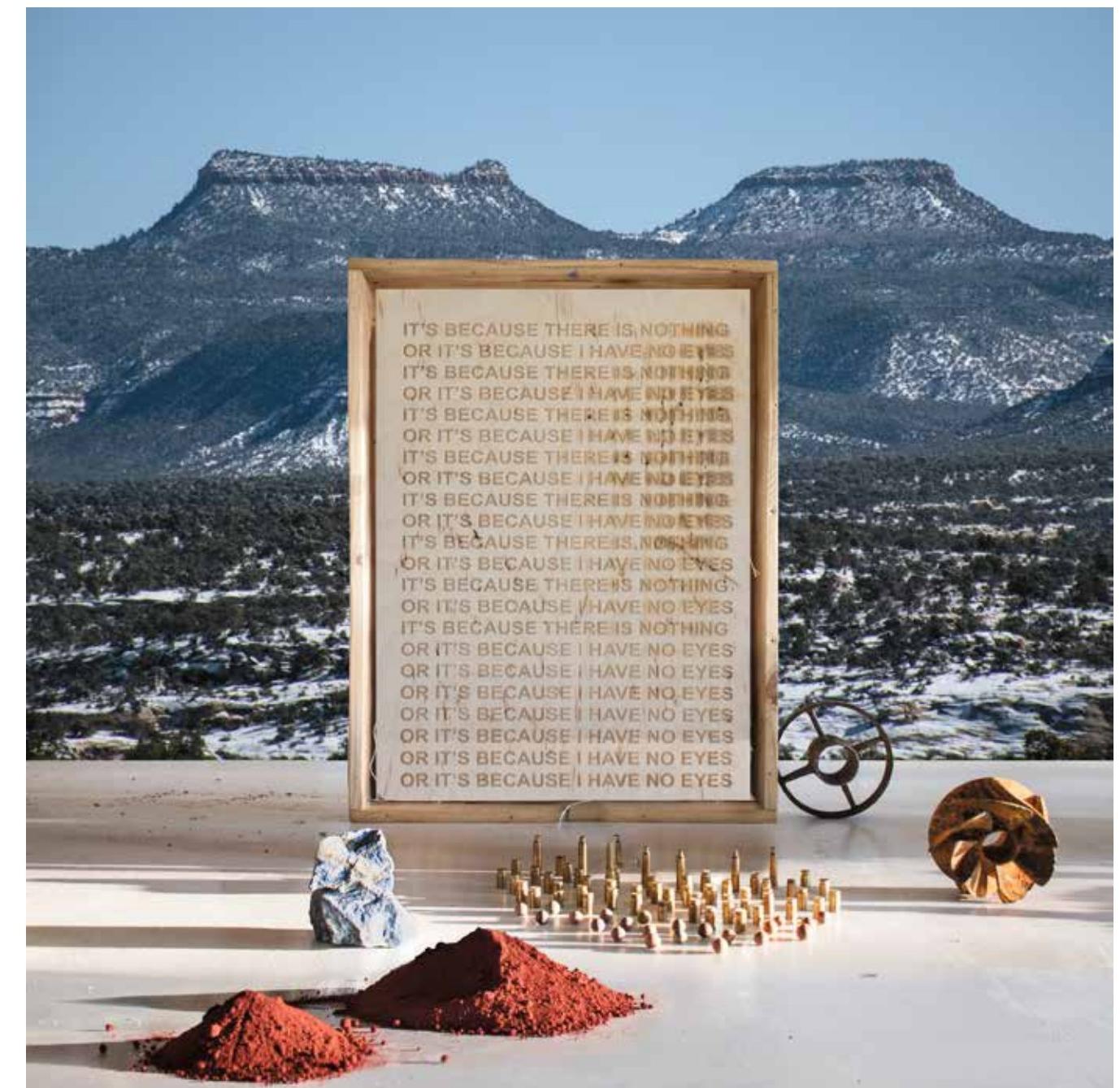
Vicky Sambunaris, Untitled (Pump Jack), Kenilworth, Utah, 2018, C-print



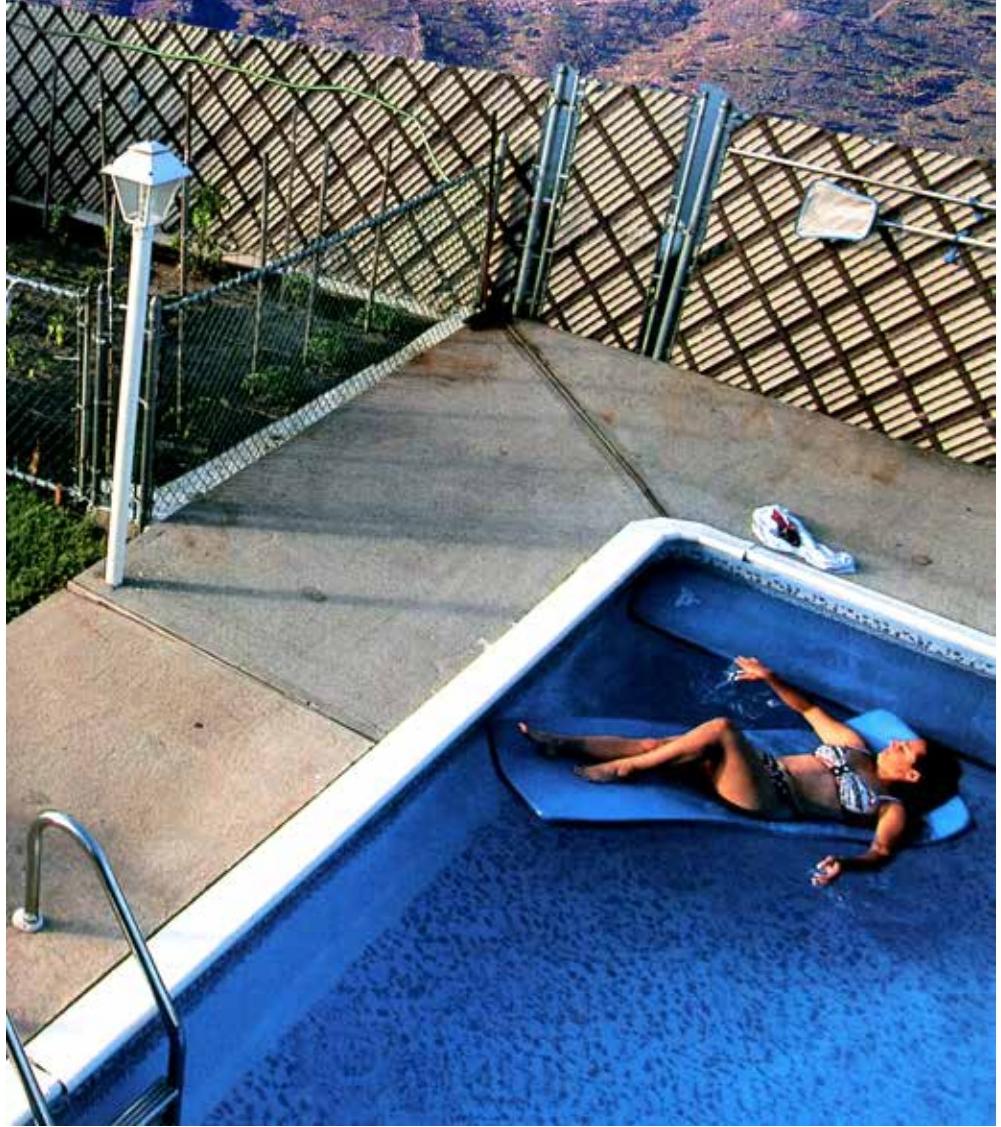
Eve Andrée Laramée, Uravan Uranium Mining Site, Colorado, 2010, photograph



Mary Mattingly, A Silence Contained for Years, 2018, digital C-print



Mary Mattingly, Between Bears Ears and Daneros Mine, 2018, digital C-print



Peter Lyssiotis, Untitled, 2019, photomontage



Peter Lyssiotis, Untitled, 2019, photomontage



Peter Lyssiotis, Untitled, 2019, photomontage

# RAPSON GROUP (GEOLOGY TEXT PANELS)

John Roloff

Rapson Group (Geology Text Panels), is a work based upon my original research as the public artist selected for the new Stephen Holl addition to Rapson Hall at the University of Minnesota, Minneapolis, MN in 2001. Rapson Group (Geology Text Panels) is located in the West Garden of Rapson Hall and shares the site with Site Index, a companion landscape project done in collaboration with Rebecca Krinke, Associate Professor of Landscape Architecture at UMN, also for the new Holl addition.

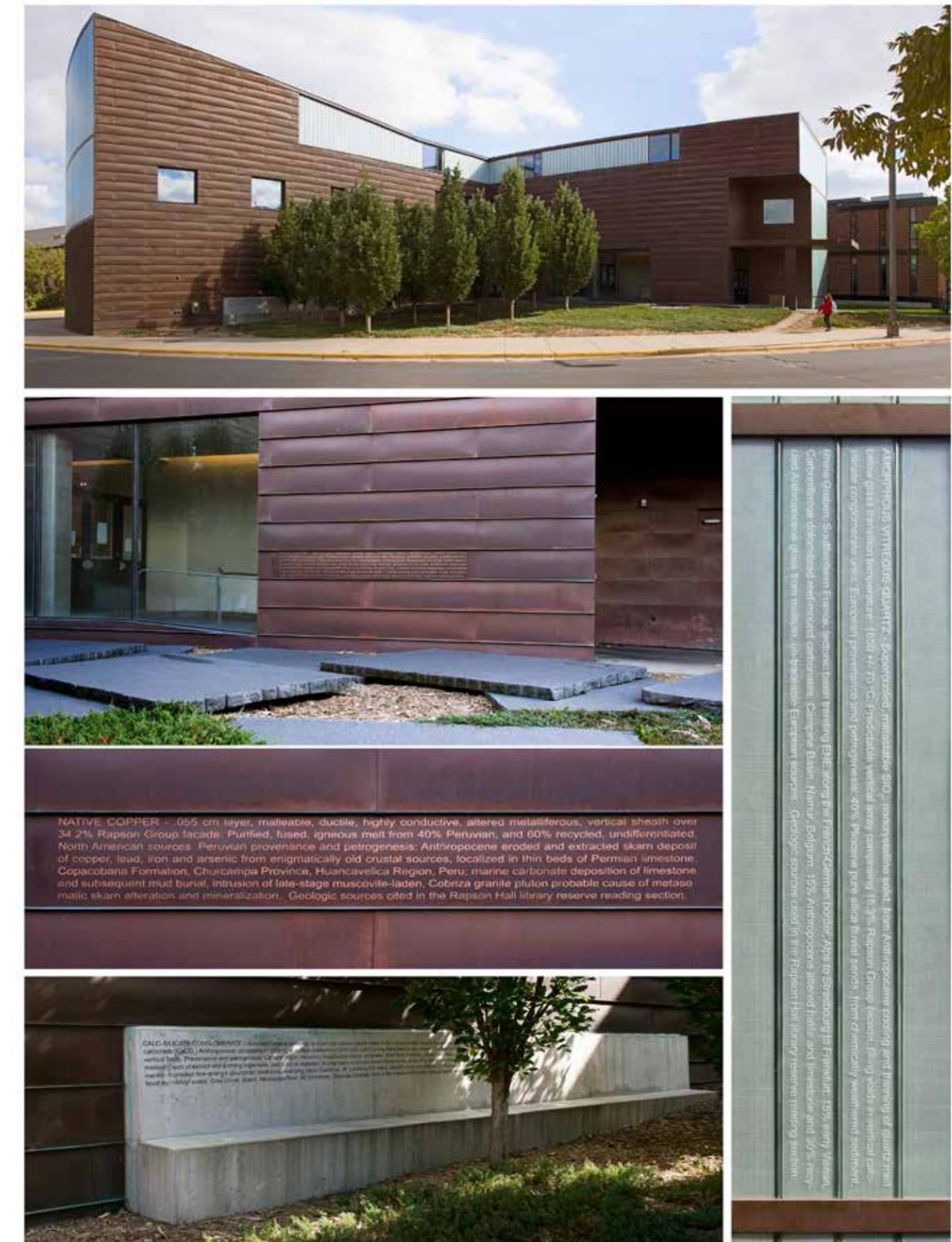
Rapson Group (Geology Text Panels), completed in 2013, is conceived as an allegorical vision of Rapson Hall as a Holocene/Anthropocene geologic "formation" whose geomorphology is that of the Rapson Hall architecture. In this sense Rapson Hall is seen as a geologic structure or "landscape" constructed of a series of other, earlier, geologic landscapes each with their own embedded materiality, history and unique environment/context on or below the earth. Beyond the natural processes that formed the raw materials of Rapson Group, the applied materials were eroded, processed and "deposited" by human activity, a process which may be termed "anthroturbation".<sup>1</sup>

The Rapson Group (Geology Text Panels) concept was developed by research and analysis of a range of information about the industrial, geologic and paleogeographic history of the four primary materials used in the construction of the full Rapson Hall structure: brick, concrete, glass and copper. The wording in geologic language for each text panel, of appropriate geophysical and geochemical information, as well as paleo-geographic context and origin for each material was created with the help of Carrie Jennings of the Minnesota Geologic Survey. The original planned sites for the panels were developed and approved in 2004 as a holistic installation relating to the new form of Rapson

Hall and the full implementation of Site Index in all four gardens around the Holl annex. The final installation of three of the panels: concrete, copper, and glass, were re-located in 2013 to the West Garden, the only completed garden of Site Index. The brick text panel, designed for placement on the original brick-clad Rapson Hall structure, facing the Rapson Hall East Garden, was not installed as originally planned. The term "Rapson Group," was suggested by Carrie Jennings as the proper geologic category and name for a formation of this type.

The text for each Rapson Group geology panel was distilled from research into each material's source, mineralogy, tectonic and metamorphic history, paleogeography, paleo-depositional environment, Holocene/Anthropocene, transformation, transport and depositional/installation characteristics. Numerous papers from appropriate geologic and industrial literature were consulted as well as personal communication with geologists, contractors and manufacturers of the Rapson Group materials. In this document, under "References/Bibliography" for each material, are listed the primary geologic references used in the research as well as additional materials for further reading. Copies of the reference and some ancillary documents are included in a separate container as part of a boxed set of documents for this project at the Architecture Library at UMN and selected other educational institutions. Geologic laboratory analysis was performed on samples of each material by Katherine Waring and associates at the UC Davis Geology Department (thin sections) and Mineral Labs, Inc., Lakewood, CO. All the samples were subjected to Scanning Electron Microscopy (SEM) and Energy-Dispersive X-ray Spectroscopy (EDS) analysis, the brick and concrete also underwent X-ray Diffraction (XRD) analysis and the glass was also analyzed using X-ray Fluorescence (XRF) technology.

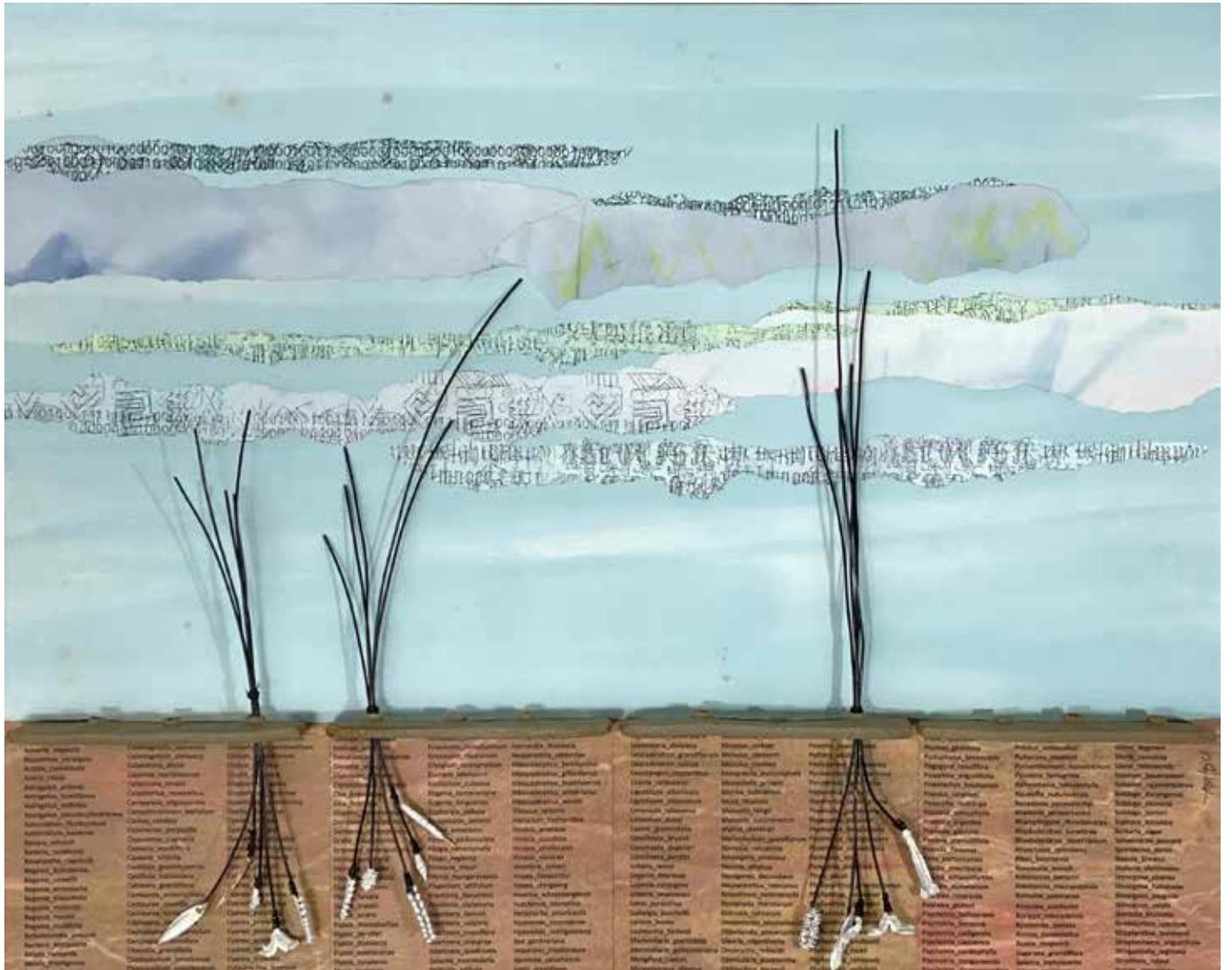
1. A term developed in conversation with Paul Spudich, geophysicist at USGS, Menlo Park, CA, circa 1998.



Rapson Group (Geology Text Panels), West Garden, Rapson Hall, College of Design, University of Minnesota, Minneapolis, MN, John Roloff, 2013. Text etched in-situ, highlighted with paint, lacquer, concrete, copper, glass, size variable.

## "AMERICA'S FROGS AND TOADS DISAPPEARING FAST"

Dean Rader



Ashby Carlisle, Memorial, 2019, dyed and printed paper, clay, metal and seed pods. Memorial was made in response to the flood of articles appearing in June, 2019 that reported 571 extinct plant species in the last 250 years.

Old globe, bucket  
of algae and ash,  
tar pit of blood

and bile, red rock,  
white bone, bowl of  
fire, floating bed

of blue death, little  
pebble, dot of  
darkness and glory,

you've pressed us  
into everything we  
are, ignited every

single thing we say.  
We are lit up by  
you and you

alone, even now,  
as we try to end  
things between us,

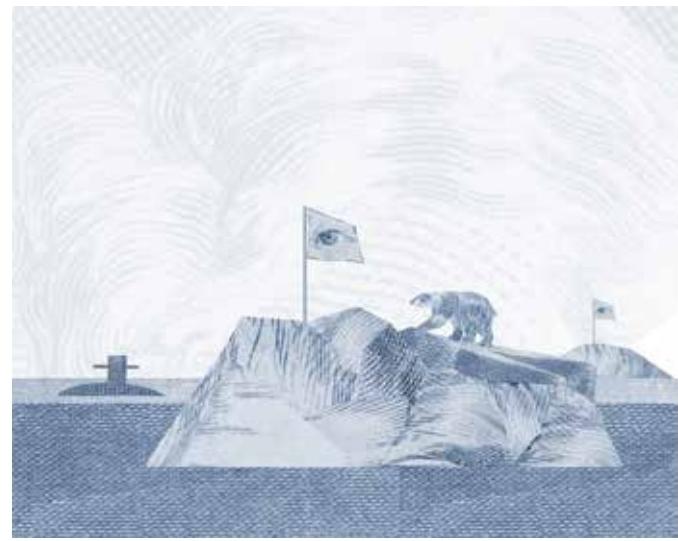
we recall  
that it has all  
arrived from

somewhere,  
what is  
is what was,

like the blistered  
light of a burst  
star, long ago

imploded,  
only now flashing in  
our silent sky.

Reuters, May 22, 2013



American Banknote Collage: Bee, 2019, Anneli Skaar, Cyanotype from banknote collage

American Banknote Collage: Fires, 2019, Anneli Skaar, Cyanotype from banknote collage

American Banknote Collage: Polar Bear, 2019, Anneli Skaar, Cyanotype from banknote collage

American Banknote Collage: Whales, 2019, Anneli Skaar, Cyanotype from banknote collage



Claire Illouz, VESTIGES III, 2019, etching

# SUB SPECIE AETERNITATIS

Dean Rader

*Nothing can have as its destination anything other than its origin.*  
—Simone Weil

bringing it down into what it once was—

gravity of all undoing—

For a long time

molecule, atom:

the clouds have along the edges of things

what isn't burning?

been gathering—

Even the moon,

the earth of course is done with symbolism

lit by low tide

and yet still there is always a system—

and the fire of its path,

if not colluding then coalescing:

ashblack and shadowslit,

we are after all always under—

smolders in its black bowl.

the earth seems out of itself to be rising

Some say a storm cometh—

but nothing falls from above but water—

a storm some say,

and yet it too rises,

a storm—

like, the author wrote,

yes, well,

the sun—

Everything begins in the sky—

metaphor for the self

as well as that which it flames in to:

the darkness:

outside my window now

and I can see the ocean



Nicol Ragland, *Between Two Worlds No. 2*, 2012, photograph



Nicol Ragland, *Between Two Worlds No. 4* 2012, photograph



Nicol Ragland, *Between Two Worlds No. 8* 2012, photograph

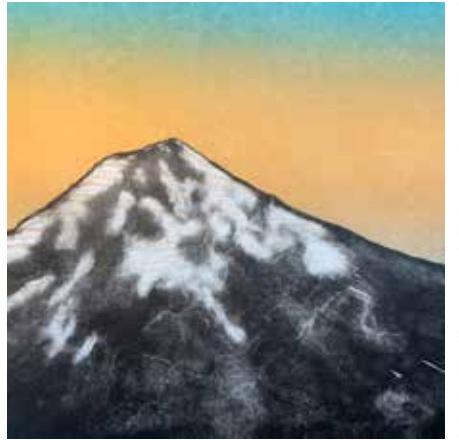
## BETWEEN TWO WORLDS

Nicol Ragland

[WWW.NICOLRAGLAND.COM](http://WWW.NICOLRAGLAND.COM)

According to the World Wildlife Fund, the population of wild vertebrates decreased by 58 percent between 1970 and 2012. If the present rate of decline continues, wild vertebrates could disappear entirely by as early as 2026. This is known as “year zero”—the year when all wild animals are gone.

*Between Two Worlds* is a fine art series that addresses the accelerating destruction of wildlife as a consequence of industrialized society. Time spent in East Africa, India and Southeast Asia allowed me to reflect on the disconnect created by first world social structures and industry, leading to the realization that the current storm of destructive activity can equally create the conditions for change. Institutions are beginning to adopt new ideas, move in new directions, and evolve. By reflecting on the truest aspects of our existence, we can enter into an age of grace with a renewed focus on regenerating the wild.



Above, left to right: Diane Jacobs, Northern Face of Mount Hood, wood engraving; Diane Jacobs, Eastern Face of Mount Hood, lithograph; Diane Jacobs, Mount Hood, etching; Facing page, clockwise from top left: Diane Jacobs, Sumi ink drawings from Owed to the Mountain: Red-tailed Hawk, Western Garter Snake, Coyote, and Lynx.

## OWED TO THE MOUNTAIN

Diane Jacobs

*"Stories are both history and prophecy—time is circular—stories are among our most potent tools for restoring the land and our relationship to it."*

—Robin Kimmerer

Owed to the Mountain is a sculptural artist book where a cloth covered box unfolds to reveal a paper replica of Mt. Hood. Each directional mountain view is illustrated in a different printmaking technique, while storytelling by elders from the Confederated Tribes at Warm Springs deepens and contextualizes the relationship. Three paper replicas of the mountain, each nestled inside the next, represent the snow, watershed, and volcanic layers. Beneath the mountain rests a booklet that weaves multiple voices to convey the complexity of this special place.

The seed for this project was planted in 2013 after spending a week in the Mt. Hood National Forest backpacking with artists and Signal Fire guides (Signal Fire is an organization that engages artists in our remaining wild places).

This project has been developing slowly to honor Indigenous sovereignty, acknowledge the importance of public land, and raise awareness of forest

mismangement by Mt. Hood National Forest. The climate crisis is forcing communities to make connections between all of our struggles and weave them into a coherent narrative for collective action to protect life on earth.

Intended outcomes are to cultivate knowing a place deeply; share indigenous wisdom; build community and turn our love for the mountain into action by demanding a new management plan from the Mt. Hood Forest Service that prioritizes climate resilience and puts an end to industrial timber production.

As Naomi Klein, one of the great theorists on climate change writes, "When local knowledge is passed on with a sense of sacred duty from one generation to the next we understand our relationship to the land." She also writes, "We lack observational tools necessary to convince ourselves that climate change is indeed an emergency—let alone the confidence to believe that a different way of living is possible."

This artist book will be a catalyst to share understanding and knowledge that respects all life and the intricate balance. Elders and culture keepers will create alternative worldviews that value interdependence, reciprocity, and cooperation.



## LIFE ON EARTH

### OUR CHILDREN'S STORY

Sam Winston and Oliver Jeffers

As we go about living amid a potent mix of information overload and compassion fatigue, we collectively—for reasons of self-preservation—shrink back into the busy-ness of our daily lives, ignoring the larger picture. But what could be more essential to self-preservation than having a home, a place, a planet, to live on? We need to find new ways of letting the harshness of our current reality—and our ignorance to it—take root in our hearts. While our children need powerful stories that help them learn to grasp complex ideas, we need to be learning along with them. And we need to stop conveniently forgetting some of the simple facts we expect our children to retain.

Our culture has often relied on symbols from the natural world for our spiritual and psychological wellbeing. Our devotion to nature—in its symbolic form—is devout and pervasive. But, while we borrow so heavily from this world, we fail to return the favor in honouring its right to exist.



Left: Sam Winston and Oliver Jeffers,  
Life on Earth, 2019



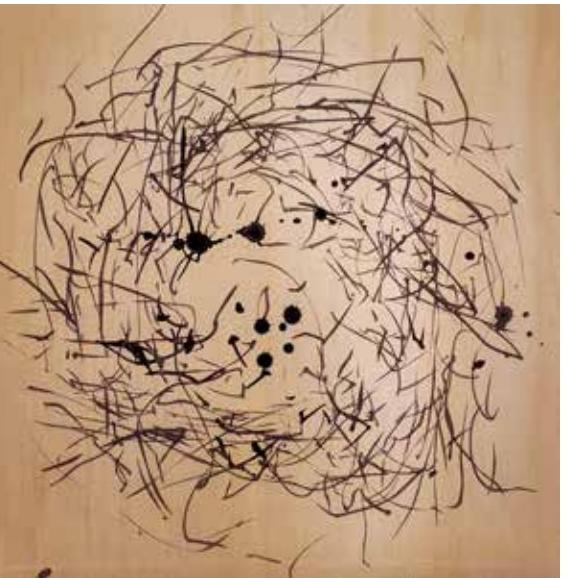
KW Schmidt, *I Can't Go On. I'll Go On*, 2016, acrylic on canvas



KW Schmidt, *A Sharp Intake of Breath*, 2014, acrylic on canvas



KW Schmidt, *Aftercomers Cannot Guess the Beauty Been*, 2016, acrylic on canvas



Above: Morgan Syring, *Support ink on surface, 3 minute stay; support ink on wood, 6 minute stay; support oak ink on wood, 9 minute stay; support tree on tree (from Paper Supports series)*, 2019, Handmade oak gall ink on wood panel

Center: Morgan Syring, *Where will you run to?*, 2019, Handmade indigo ink on yupo

Right: Morgan Syring, *What do you see on your horizon?*, 2019, Handmade indigo ink on yupo



## SURVIVAL

John Grey

He salivated over beef sides  
in butcher's windows  
but lived on the likes of found cans of tuna fish  
He was just an old man  
begging for mouthfuls,  
struggling to button a forlorn coat  
as he blew across the sidewalk.

He was jealous of the woman  
who could waste her money on candles  
even as she grumbled her way down the street,  
complaining of rheumatism.  
She'd no doubt bought soap.  
It'd been months since he'd felt  
the touch of anything cleansing on his skin.  
He vowed, if an angel ever dropped in  
for a visit, he'd promise him anything  
in exchange for a hot shower  
and a change of underwear.

In spring, he almost drowned in a flash flood.  
In summer, the life near sweated out of him.  
Somehow, he survived  
despite the nuns who tried to save his soul  
and the cop who moved him along.  
He even got mugged once.  
He took it as a compliment.  
As if someone thought he had anything worth stealing.

## THE CORFU GLOWWORMS

John Grey

He saw himself in a mirror from time to time  
and shuddered.  
A dim alley was his bedroom.  
A nephew went looking for him once  
but had no luck.  
His mother haunted him.  
He could feel his father looking over his shoulder.  
Any coin discovered on the ground  
soon felt the clutch of his fingers.  
The first flakes of snow  
were like the guard and padre  
showing up in a condemned man's cell.  
The warm had this habit  
of going out of this world.  
He had this dream where he went with it.

Twilight passes.  
Light's sucked out of the air  
but not breath.  
Glowworms dart here and there  
blink on and off  
like signals out at sea.

The black is fine, silky,  
the wind slow to materialize,  
a little drugged  
after a day fluttering  
the surface of the Mediterranean.

The glowworms  
are attracted to the olive trees,  
so up and down the hills,  
the crop is lit by  
a flash of calyx and corolla.

I sit on the stone step of the villa,  
the synchronicity of light  
acting on my head like wine.

Sometimes, a magical place  
needs to reestablish its credentials.  
Corfu does it with sunset crushed-strawberry pink,  
the brilliant colors  
from the riotous wildflowers  
to the bright primary hues of the shutters.

And, in between  
when the fishing ends  
and the dancing starts,  
the glowworms  
don't let a moment go wasted.

They chime like bells  
of brilliance.  
My eyes smile wide  
to match their timbre.



The Natural History Museum, photo courtesy of Not An Alternative

## NOT AN ALTERNATIVE

### THE NATURAL HISTORY MUSEUM

[WWW.NOTANALTERNATIVE.ORG](http://WWW.NOTANALTERNATIVE.ORG)

Not An Alternative (est. 2004) is a collective that works at the intersection of art, activism, and critical theory. The group has a mission to affect popular understandings of histories, symbols, and institutions. Not An Alternative's work has been exhibited in museums around the world, including Guggenheim, PS1/MOMA, Smithsonian National Museum of the American Indian, Queens Museum, Brooklyn Museum, Tate Modern, Victoria & Albert Museum, and Museo del Arte Moderno, and was cited in The New York Times and ArtNet's "Best in Art in 2015" round-ups.

Not An Alternative's latest, ongoing project is The Natural History Museum (NHM, 2014—), a pop-up museum that highlights the socio-political forces that shape nature, yet are excluded from traditional natural history museums. As a "Trojan horse" strategy, NHM aims not only to critique the museum sector as it exists but also to transform it into a vital infrastructure for environmental struggle. NHM operates in a range of venues, including art museums, its mobile museum bus, major conventions for museum professionals, and within traditional natural history museums. NHM collaborates with artists, community groups, scientists, and museum professionals to create new narratives about our shared history and future, with the goal of educating the public, measurably influencing public opinion, and inspiring collective action.



The Natural History Museum, photo courtesy of Not An Alternative



The Natural History Museum, photo courtesy of Not An Alternative



The Natural History Museum, photo courtesy of Not An Alternative



The Natural History Museum, photo courtesy of Not An Alternative



## AFTERWORD

### PREVIEW TO A GLORIOUS RUCKUS

Michael Traynor

At this critical time of climate disruption and unsustainable extraction of natural resources, Peter Koch [1], a printer, publisher and fine artist, has conceived of Extraction: Art on the Edge of the Abyss ([www.extractionart.org](http://www.extractionart.org)) [2]. He, and the late Edwin Dobb [3], a writer and teacher of environmental stories, and a growing group of allies, launched this inspiring project in 2018. They created “a multi-layered, cross-institutional, trans-border multimedia ruckus [4] over the single most urgent planetary concern of our time—the social, cultural, and environmental costs of unbridled globalized extractive industry, including the negative effects of climate change; the deterioration of land, water, and air; the devastation and displacement of poor, minority, and indigenous communities; and much else.”

Leaders of the Extraction Art project and natives of Montana, Peter came from Missoula and Edwin from Butte. While living in California, they maintained strong Montana ties, as Peter still does. They set the stage for a constellation of events in 2021 and enlisted confirmed participants from numerous and diverse museums and galleries, curators, artists, photographers, writers, libraries and rare book departments, organizations and publishers, and a team of advisers. I learned of the project from Malcolm Margolin [5], author of the classic, *The Ohlone Way*, leader of the California Institute for Community, Art and Nature [6], and founder and president for forty years of Heyday, a nonprofit publisher on whose board I served.

The project has published WORDS on the Edge [7], a portfolio of poems and lyrical texts addressing themes of nature and its irresponsible destruction, as well as this major compilation—the “Megazine”—

and will continue to publish periodic newsletters, documents/manifestos/images heralding a series of artistic, musical, and dramatic events and exhibitions. It is also completing arrangements for those events. Jane Hirshfield [8], poet, author, and confirmed participant, is preparing a forthcoming poetry reading at the San Francisco public library.

It is human nature and a necessity to consume resources to survive. It is a human frailty and not a necessity to do so unsustainably. The extraction problem is not confined to mining fossil fuels or minerals from land and the deep sea. As is clear from the work collected in this volume, unsustainable extraction occurs in many forms, for example, clear-cutting forests; overfishing oceans, rivers, and lakes; and over-drafting groundwater from aquifers. Unsustainable extraction in any form is attended by greed, lawlessness, treatment of the earth and its marvelously varied inhabitants as an externality, and a disregard for present and future generations.

In Butte, unsustainable extraction created the mammoth open pit known as the Berkeley Pit, a mile wide, mile-and-a-half long, and third of a mile deep abyss where thousands of snow geese have perished after landing on its toxic lake. It is a hellish legacy of the Anaconda copper mine. Ed Dobb told its story in his article, *Pennies from Hell*.

That toxic abyss also symbolizes the deep hole that we and the fellow inhabitants of our planet will all be in if we don’t act now, with the crucial help of the arts. Instead of plunging into the abyss, the arts can help us step away from the edge and begin moving in a different direction.

In her book, *Undermining: A Wild Ride Through Land Use, Politics, And Art in the Changing West*, Lucy Lippard [9], author, curator, and confirmed project participant, writes: “Of course art cannot change the world alone, but it is a working ally to those challenging power with unconventional solutions.” In their article, *Arts, Sciences and Climate Change: Practices and Politics at the Threshold*, scholars Jennifer Gabrys and Kathryn Yusoff [10], write that “Between scienc-

es and arts, there are correspondences and passages to be detected, which may even come about through a shared attention to issues and events—like the breaking up of the actual Northwest Passage. Previously impassable or difficult terrain opens up—not to reveal a space of simple agreement, but instead to suggest new spaces of exploration, imagination and concern. Climate change reveals such a passage, a space of environmental shifts and cultural complexity, of scientific study and political conflict.” In addition to the focus of the Extraction Project, varied recent exhibitions, programs, and commentaries demonstrate that art can help save the planet [11].

Combining their talents, vision, and aesthetic and ethical senses, artists can imaginatively and resolutely explore new spaces and forge alliances—when fitting and feasible—with scientists, lawyers, and other individuals and organizations concerned about our planet. Together, they can cross “the line where the pressure of duty leaves off and the challenge of excellence begins,” in the words of legal philosopher Lon Fuller [12].

Nine years ago, in *Note to the Next Generation*, I said, “Apocalyptic words were not effective to cause people preoccupied with various stresses to pay attention to climate change and may have even fostered alienation, denial, and hostility.” As Elke Weber [13] has recently written: “1) climate change does not elicit sufficient fear or dread; 2) motivating climate action through fear or guilt is a bad idea even though it might sound like an effective approach; and 3) we need to help people recognize their personal experience of the concrete impacts of climate change on their lives, though this is easier said than done and may not work for everyone.” Incremental progress is hard enough to achieve on any front and is inadequate to meet the challenge of climate disruption. Despite advances on some fronts, for example, in California and with the Paris Agreement, there have been retrograde and hostile maneuvers on others, for example, the current administration’s renewed emphasis on unsustainable extraction, at-

tack on protection of endangered species, disregard of environmental laws, withdrawal of the U.S. from the aforementioned Paris Agreement [14], rejection of science, denial of climate change, and appeal to base and negative partisanship [15]. There is plenty of cause to sound the alarm. We also need to find and use improved ways of communication that will move people to act positively.

The Extraction Project holds the promise of fostering breakthrough changes in public opinion and public policy, including wider recognition of an enforceable human right to a healthful environment [16]. It is a singular component of a multi-pronged strategy of action that involves various disciplines. It augments significantly the historic and contemporary contributions of the arts to the environment and to meeting the challenges of climate change.

### WHY ARE THE ARTS NEEDED?

Professional disciplines such as science, engineering, law, economics, public policy, and journalism are necessary but not sufficient to counter unsustainable extraction, environmental injustice, greed, and ignorance. They are not adequate alone to overcome the harm caused by “merchants of doubt,” “truth decay,” and insidious advertising [17]. “The failure of widely accessible, compelling science to quiet persistent cultural controversy over the basic facts of climate change is the most spectacular science communication failure of our day,” as Dan Kahan, founder of the Yale Cultural Cognition Project, has critically observed [18].

Science and the arts are closely related and can inspire each other. Indeed, the term “scientist” is a hybrid of “artist” and the Latin “scientia.” Both disciplines require creativity, imagination, perseverance, and passion. Leonardo da Vinci was an artist and inventor [19]. John James Audubon was a naturalist and artist [20]. Samuel F. B. Morse was an inventor and painter [21]. Alan Bean was an astronaut and painter [22]. Hedy Lamarr was an actress

and inventor [23]. Alexander Fleming's artistic eye and painting of bacteria, along with serendipity and genius, helped him discover penicillin, benefit humanity, and earn the Nobel Prize [24]. Rosalind Franklin's and Raymond Gosling's famous Photo 51 led to the discovery of the DNA double helix [25]. Hope Jahren's "Lab Girl," reflects what Vladimir Nabokov described as essential for a writer: "the precision of a poet and the inspiration of a scientist [26]." George Seurat's paintings were influenced by the science of color [27]. David Hockney's views of art history are influenced by physics [28]. Santiago Ramón y Cajal, a Nobel Prize winner and the reputed "father of modern neuroscience," also produced more than twenty-nine hundred drawings that reveal the nervous system, many of which are reproduced in the recent book, *The Beautiful Brain* [29].

Evolving neuroscience is revealing the power of art to induce changes in human behavior, facilitate discovery, and inspire invention [30]. Stories and other forms of art have the power to inspire empathy, motivate action, and release the brain's oxytocin (OXY), a neuropeptide that stimulates emotions and may induce altruism [31]. One recent experiment concludes that "a more accurate understanding of altruism and its underlying regulatory mechanisms, including OXY [...]" may "motivate more individuals and groups to sacrifice money for ecological sustainability, which may help improve climate change prevention and the preservation of biodiversity." Perhaps altruism and a consequent sense of fairness and justice for our environment may also foster a sense of fairness and justice for each other.

While recognizing the positive potential of emotions and the arts and the insights of neuroscience, we must also recognize their negative potential for manipulation and misuse such as the propaganda reflected in Nazi, Soviet, and Maoist posters, films, and music. This danger is even more ominous in the digital age than it was in the "Age of Mechanical Reproduction" when Walter Benjamin warned that "The logical result of Fascism is the introduction

of aesthetics into political life [32]" and Clement Greenberg wrote that although it was "too difficult to inject effective propaganda into" avant-garde art and literature, "kitsch is more pliable to this end" and "keeps a dictator in closer contact with the 'soul' of the people [33]."

Communicating science through art is essential. As Bill McKibben, founder of 350.org, has written, "science alone can't make change, because it appeals only to the hemisphere of the brain that values logic and reason [34]." Reason and meaning on the one hand and emotion and feeling on the other are mutually reinforcing as well as occasionally in tension. The arts help link experience and emotion. As Elaine Scarry has written about beauty and justice and their mutual relationship with symmetry, "matters that are with difficulty kept legible in one sphere can be assisted by their counterpart in the other [35]." Biomedical engineer and science communicator Paige Jarreau states that art "gives scientific ideas shape and imagination." Confronting climate change without engaging both sides of our brains is like confronting a bully with one hand tied behind one's back. [36]

It took me some time to appreciate the crucial and important role the arts have played and must play. After writing about climate change and scientific uncertainty and participating in workshops with scientists, journalists, and lawyers, I realized that science and reason, although critical, are not getting through to enough people. This essay about the Extraction Project's "glorious ruckus" is written with the intention of sharing with those friends, colleagues, and potential supporters who might not already have considered it, my appreciation for the vital voices of artists.

## HOW CAN ARTISTS HELP?

Artists such as painters, musicians, dancers, poets, storytellers, dramatists and theater artists, photographers, filmmakers, fine-art printers, and

cartoonists—who must also have environmental authenticity and credibility—are needed to bring their talents, creativity, spirit, and emotional sensibilities to the challenge of protecting and reclaiming our environment. They bring issues into the realm of emotions, affecting people on a sensory, spiritual, and visceral level in a way that scientific reports, statistics, graphs, and reason do not. They engage us. As artist and philosopher Enrique Martínez Celaya says, "Since it exists only as an experience, art is brought forth not only by the artist but also by its observer [37]."

Artists remind us of our humanity and renew our determination to care for our earth and our descendants. They evoke the environmental intimacy reflected in cave paintings by ancient humans and Neanderthals and in contemporary artworks such as *Storm King Wavefield* by Maya Lin and *Storm King Wall* by Andy Goldsworthy [38]. They help us restore lost intimacy and renew our reverence for nature, as Henry David Thoreau did in 1854 with *Walden* [39] and as my friend and Earthjustice colleague, Edwin Matthews, does today in Litchfield *Country Journal: Notes on Wildness Around Us* [40]. They move us from despair about a *Silent Spring* to the hopefulness of the hymn, *How Can I Keep from Singing* [41]. Like the Lorax, they speak for the trees who have no tongues, and, like the fox who spoke to the Little Prince, they remind us that "You become responsible, forever, for what you have tamed [42]." Poet John Daniel, in *Descendants of the Nuclear Age*, reinforces our sense of responsibility to unborn



Charlotte Bird, *Goodbye My Village*, 2018, Hand-dyed and commercial cotton, polyester organza, polyester thread, perle cotton thread; hand cut and fused applique, machine quilted, hand embroidered, 48 by 32 inches

descendants and fellow creatures who lack human voice and power: "only in us can they speak at all, they speak if we speak for them [43]." Artists spark a child's sense of wonder, simplicity, and good-heartedness and rekindle those spirits in adults. They inspire action while rejuvenating our inner wilderness.

Artists of all ilk restate our deepest and evolving values in a language accessible to the times (wheth-



Timothy McDowell, *Mad Mother*, 2016, oil and wax on linen.

er fine arts, music, or literature). They reinforce the compassion that must attend the law and guide science, which without values and compassion are capable of monstrous undertakings. Their function, as Kenneth Rexroth said, “is the revelation of reality in process, permanence in change, the place of value in a world of facts [44].” They act as our conscience, as Picasso’s *Guernica* demonstrates so vividly. They help us cope with and sometimes even survive the direst conditions as they did for some prisoners in Nazi concentration camps and, under harsh but less dire conditions, for some Japanese Americans segregated and incarcerated in U.S. camps and centers during World War II [45]. Art helps migrant children in detention camps find their voices. “Art is here to prove, and to help one bear, the fact that all safety is an illusion,” said James Baldwin in his talk, *The Artist’s Struggle for Integrity* [46].

Artists have lasting influence. They address the widespread hunger for community, spirituality, and fairness that Pope Francis, for example, in his encyclical, *Laudato Si*, and other leaders are addressing [47]. They evoke our ability to empathize with vic-

tims of environmental injustice, cope with uncertainty, appreciate new frames of reference, identify with others, celebrate the natural world, surmount melancholy and apathy, and build morale such as the song *We Shall Overcome* does in the ongoing struggle for civil rights. They transcend language barriers as well as national, political, and cultural boundaries. They dramatize earth wounds like acid mine drainage (AMD) as well as reclamation. T. Allan Comp, a former historian for the National Park Service and a historic preservationist, has spurred community effort in Appalachia through his AMD&Art project to reclaim toxic former coal mines using design, sculpture, and history, as well as science [48].

Rachel Carson’s *Silent Spring* combined science and imagery to help ignite the environmental movement [49]. She also said, “I believe quite sincerely that in these difficult times, we need more than ever to keep alive those arts from which [we] derive inspiration and courage and consolation—in a word, strength of spirit.” Upton Sinclair’s *The Jungle* exposed the meatpacking industry and led to the Pure Food and Drugs Act of 1906 [50]; Sinclair famously said “I aimed at the public’s heart and by accident I hit it in the stomach.” Likewise, the Abu Ghraib photographs and Fernando Botero’s paintings bring home the evils of torture and lawlessness, and Sebastião Salgado’s photographs illustrate the bravery and beauty of workers while the fruits of their toil are being extracted under often grim conditions [51].

## ADDITIONAL EXAMPLES OF ENVIRONMENTAL CONTRIBUTIONS BY ARTISTS

### POEMS

Poems such as “On the Fifth Day” by Jane Hirshfield, “Erosion” by Terry Tempest Williams, “Extinction” by Elizabeth Herron, “Poem of the One World” by Mary Oliver, “The Problem of Describing Trees” by Robert Hass, “Watershed” by Tracy K. Smith, “For

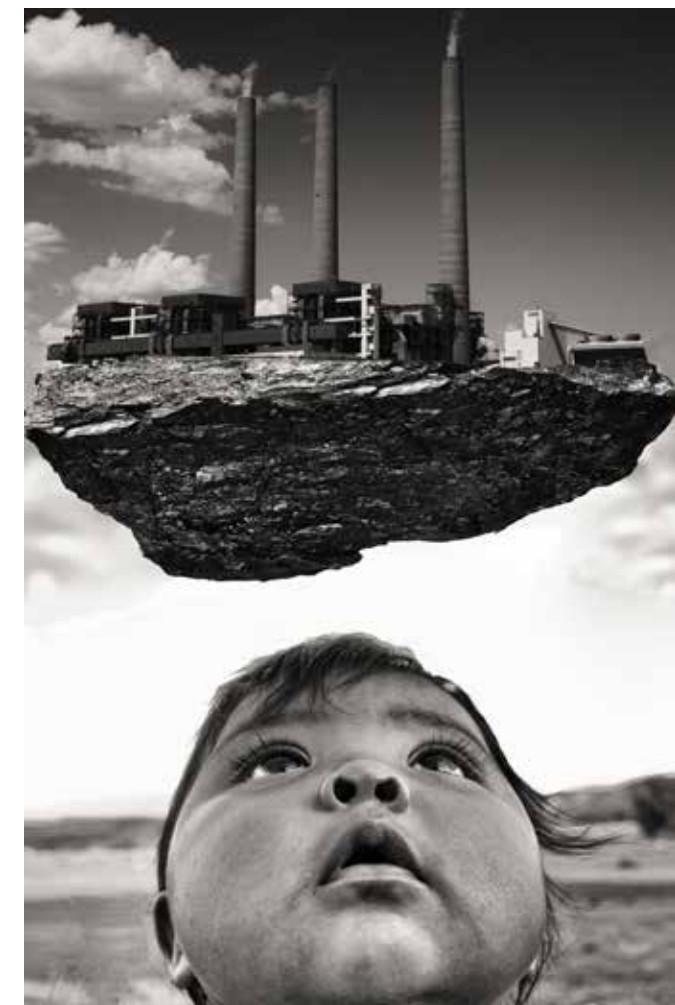
the Children” by Gary Snyder, “The Peace of Wild Things” by Wendell Berry, and “Waging Beauty As the Polar Bear Dreams of Ice” by Daniela Gioseffi, help us imagine a better world, comprehend the despoliation we have caused, listen to new voices such as “the cellists” in Jane Hirshfield’s poem, and enchant as well as sometimes disenchant us [52]. “Poems pull water from air we thought was dry,” says poet Kristin George Bagdanov, author of *Fossils in the Making* [53]. “Poets are the unacknowledged legislators of the world,” wrote Percy Bysshe Shelley [54].

### SONGS

Songs such as “This Land is Your Land” by Woody Guthrie, “Big Yellow Taxi” by Joni Mitchell (“they paved paradise and put up a parking lot”), “What Have They Done to the Rain” by Malvina Reynolds, “Rejoice in the Sun” by Joan Baez, “Don’t Go Near the Water” by Johnny Cash, “Save Our Planet Earth” by Jimmy Cliff, and “Sailing Up My Dirty Stream” by Pete Seeger, which contributed to the enactment of the Clean Water Act of 1972, are just a few among many examples of the intersection between music and the environment [55]. The Climate Music Project makes climate change personal through music. We can strive to make it possible to sing “America the Beautiful” with conviction that the title is still true [56].

### DANCES

Environmental dance is evolving as a way of expressing our connection to the earth. Dancing on the banks of the Cannonball River in North Dakota, the Standing Rock Sioux, joined by representatives of over 250 indigenous tribes from around the world, sought to save the sacred earth and stop the Dakota Access Pipeline [57]. Dances such as GLACIER: A Climate Change Ballet, choreographed by Diana Movius, which imagines dancers as melting polar icecaps; *On the Nature of Things*, a collaboration by Karole Armitage and Paul Ehrlich; and *Bringing the Arctic Home*, choreographed by Jody Sperling, create an emotion-



Jetsonorama, J.C. with Power Plants on Coal, Soft Sepia, 11 by 17 in

al experience and movement that may lead to action [58]. Destiny Arts in Jewels features teenagers who venture underground to find the “Book of Secrets” to help save Planet Earth and learn that they hold the secrets within themselves and have the power to make necessary change [59]. As Barbara Ehrenreich writes in *Dancing in the Streets: A History of Collective Joy*, “festivity generates inclusiveness [60].”

### PHOTOGRAPHS AND PAINTINGS

Photographs such as those by David Maisel, Robert Glenn Ketchum, Michael Light, Garth Lenz, and Mandy Barker depict the beauty of the earth as well as the despoliation that humans have caused by extraction [61]. Christmas Eve 2018 marked the 50th anniversary of Earthrise, Apollo 8 Astronaut Bill Anders’ photograph that depicted the beauty

and fragility of Earth, which the late Galen Rowell described as “The most influential environmental photograph ever taken [62].” Photographs are sometimes shocking, but can be deployed with intelligence and sensitivity to help prevent or mitigate image fatigue, foster a wariness of photoshopping and “deep fakes,” and comment on the seductiveness of the beauty of a photograph despite the horror or cruelty it reveals [63].

Photographs and paintings contribute to legislation and public policy [64]. William Henry Jackson’s photographs and Thomas Moran’s paintings led to the creation of Yellowstone National Park [65]. The photograph of President Teddy Roosevelt and John Muir, *Overhanging Rock at the top of Glacier Point, Yosemite*, contributed to the joining of state grant lands and national park lands [66]. Ansel Adams’ book, *Sierra Nevada: The John Muir Trail*, led to the establishment of Kings Canyon National Park [67]. Robert Glenn Ketchum’s book, *The Tongass: Alaska’s Vanishing Rain Forest* led to the Tongass Timber Reform Act of 1990 [68]. Believing in environmental action, Adams and Ketchum also lobbied diligently and successfully for their proposals.

## LOOKING AHEAD WITH THE EXTRACTION PROJECT

The Extraction Project has a big vision and a simple message that concentrates on the arts and the environment: It hopes to educate, provoke, inspire, and reinforce others—educators, activists, academics, journalists, scientists, policy and opinion makers, and concerned individuals while maintaining its independence as an art project. It has enlisted topnotch artists and art venues while respecting their boundaries and helping non-artist groups and individuals call attention to the social and environmental consequences of industrialized natural resource extraction.

Peter and the project’s allies are continuing to seek additional fruitful liaisons and funding. They are continuing to build publishing and advertising

media opportunities and sponsorship for exhibitions, especially in regrettably underfunded small art museums and non-profit galleries around the West and in potential musical venues. They are countering the nefarious forces that have targeted federal and state legislative and regulatory programs and begun a propaganda blitz promoting their anti-environmental policies. Now is an ideal time for philanthropists to support excellent projects to communicate science through art and reach people on an emotional level. “Climate philanthropy has failed” and needs to help environmentalists “learn how to speak from the heart as well as the head,” as Mark Gunther reports in the *Chronicle of Philanthropy* [69].

To cover the costs of publications, editing, marketing, administration, website creation, communications, the new Megazine, and other requirements, the project has received and continues to seek funds from individual contributors, foundations, kick-starting and crowd-funding, event sponsorships and tickets, and sales of items donated by artistic supporters. It has also received and continues to seek nonmonetary contributions such as paintings, poems, musical compositions, broadsides, photographs, printings, gallery space, and the help of volunteers.

The project continues to reach out to various environmental, tribal, and pertinent nonprofit organizations that are addressing the challenges of unsustainable extraction and climate change.

The CODEX Foundation, a nonprofit tax-exempt 501(c)(3) organization that Peter founded, will continue to receive and administer charitable donations and project funds through a separate designated account (2203 4th Street, Berkeley, CA 94710-2214; tax id. no. 11-3763607). The Extraction Project affords an opportunity to build a movement that will help our planet, the innumerable varieties of life it sustains, our families, children and grandchildren, and untold generations to come if we act for them now. Come join the glorious ruckus.

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## **GUIDELINES FOR DOCUMENTATION**

In anticipation of possibly acquiring materials from the Extraction Project for the Center for Art + Environment Archive Collections, you might find helpful some background and responses to frequently asked questions.

The Center for Art + Environment (CA+E) was established at the Nevada Museum of Art in January 2009. Its mission is “To be a global leader in supporting the practice, study, and awareness of creative interactions between people and their environments.” The CA+E Archive Collections comprise the foundational materials from which other activities of the Center are derived, such as exhibitions, publications, and public programs. The Archive Collections are an enduring ensemble of archival records, objects, and artworks that attract scholars internationally to the Museum to create scholarship. The strategy of the CA+E is to collect materials worldwide and to make them accessible to scholars and the public, both on a physical basis at the Museum and online.

Although the focus of the Archive Collections is primarily on site-specific works addressing creative interactions with various environments, some of its materials deal with the larger framework of global change and systems. As of late 2016 we have more than 125 separate archives in-house or under development, which together contain more than a million items upwards of 1000 artists working on all seven continents. We process anywhere from ten to twenty archives annually, and you can see our finding aids here: <http://www.nevadaart.org/explore/collections/cae-archive-collections/finding-aids/>.

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Sincerely,

William L. Fox  
Director, Center for Art + Environment

Sara L. Frantz  
Archivist/Librarian, Center for Art + Environment

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